User Guide

Version 3.5 rev.2 –May 2005

SUMMARY

1   INTRODUCTION

1.1   Description

Alert is a software package of **alarm and on call management** that functions under the Windows environment (Windows 98, Windows NT, Windows 2000, and Windows XP) and exploits features of the **client-server architecture** of this environment.

Alert gives a way to all Windows application to trigger calls and send messages to operators using various media's: telephone (embedded vocal server), beeps, pagers, fax, printer, email, etc.

Alert can be used by all Windows applications that support the **DDE**[1] or **OPC**[2] communication protocol.

It can be used also through its programming interface (API or Active X) in order to command its main functionalities by simple call of functions and can be solicited through its **command line** to activate, reset or acknowledge alarms or to order execution of other commands.

The possibility of selecting a **Mediator**[3] module to interface the client application and **Alert** increases ergonomics and possibilities of the software: maximal integration to the supervised application, simplified configuration of the data to supervise, possibility of interfacing with any non Windows application (UNIX, etc.).

A specific mediator, the **Message Processor** allows **Alert** to be interfaced with any application that is capable of producing information on a serial or TCP/IP link, in a file or a database or by sending short messages (GSM). This information is processed by the message processor to extract alarms and trig consequent actions.

---

[1] **DDE** ("Dynamic Data Exchange")
Windows protocol of communication and data exchange between applications. An application server proposes services to all client applications interested by these services.

[2] **OPC** ("OLE for Process Control")
Universal communication protocol that manages Client/Server communications with industrial devices and that tends to become a standard in Industry.

[3] **Mediator**
A module "mediator" is a DLL module that assumes information exchange between ALERT and the supervised application.
Its interface with ALERT being normalized, it is developed specially for a type of application and is therefore in measure to process all features of this application. It notably allows the importation of the variables defined in the supervised application, with all their parameters (alarm message, priority, groups, …) and to process directly modifications of these variables (alarm activation or deactivation, acknowledgment from the application or from ALERT).
It can also allow to realize specific processing: capture in a text file of contextual information attached to an event, dynamic modification of priority level, etc.

Alert is at the same time an **alarm manager** and an **on call server** that proposes the following basic services:

- management of users who are called to intervene either locally or at a distance.
- management of groups, every group possessing its own schedule,
- detection of alarms and trig of calls to the concerned operators,
- diffusion of alarm or service messages, either numerical, alphanumeric or vocal,
- management of call and alarm acknowledgments,
- management of alarm history including daily, weekly or monthly statistics on failures and interventions,
- management of an event log and a on line printed report,
- management of intervention reports.

With **Alert**, the client applications don't have to worry of to choose the operators to call and of the means required to alert them. They can only give the order of triggering a call cycle, explicitly by a control, or implicitly by positioning a variable in an alarm state. The selection of the operators to call and the alarm messages transmitted will effectively depend on the software configuration.

Alert can be used according to 3 modes:

Client mode:

The user application runs according to its own logic, on an independent way. Its only constraint is to deliver information that can be interpreted as events when they are transmitted or indicate a determined change of state. This transmission can be performed through a **DDE** or **OPC** server integrated in the supervised application, a **file**, a **serial link** (printer output), a **data base** and many other mechanisms.

In this mode, Alert directly assumes the polling of the events declared in the application server. It also can take in charge acknowledgments done either from Alert or from the supervised application.

Alert is also able to directly supervise a Programmable Logic Controller by the way of a DDE or OPC communication server.

Server mode:

The user application integrates the Alert software in its working logic. In this mode, **Alert** can be considered like an evolved call transmitter that allows a supervision application to be discharged from all aspects of the call management (constitution of groups and teams, schedule management, communication with operators...).

In this mode, Alert answers to explicit solicitations of the client application (alarm triggering, messages transmission...). These commands can be transmitted either through its programming interface (API) of **DLL** type, through its **DDE server** interface, or through its **command line**.

Integrated mode:

Alert uses a **mediator** module that is especially developed for an application or a type of application. This mediator takes in charge all the problems concerning the interface between Alert and the supervised application: import of variables defined as alarm with all their attributes (messages, priority, group...), detection of the activation and the deactivation of alarms, management of reciprocal acknowledgment, specific treatments, etc.

Alert can be perfectly integrated in a **network** environment. By using the NETDDE protocol (DDE by network) or **OPC** (via DCOM interface), the application can be distributed on several stations.

Alert can support **all types of media** in order to communicate numerical, alphanumeric or vocal information to an operator. The adaptation to an unsupported media requires only the addition of the suitable DLL module (driver).

Alert integrates a vocal server which allows alarm transmission and acknowledgment by using a very common media: the telephone. The vocal alarm messages can be recorded (either locally or by telephone) or, in option, they can be automatically synthesized from the associated alphanumeric messages.

With its server version, **Alert** can manage **Alert Client** stations. These client stations provide an efficient interface to deal with the software from any network station: schedules, alarms, histories, journal, etc.

Associated to the **Visual Access** software (terminal and WAP server), **Alert** proposes a remote terminal interface that offers many services to a remote operator (consultation and acknowledgment of alarms, visualization and modification of schedules, call numbers, visualization and downloading of files, remote supervision of the supervised application through synoptic screens and menus.

Alert is a **complete** and **secured tool** for alarm treatment:

- **Alert** is not only able to record and transmit the detected alarms, but it can display some complementary information (instructions, contextual report established automatically at the time of the alarm, dynamic values).

- **Alert** guarantees **traceability** of operations (alarms detected and actions performed to handle them), through the **event log** and the **alarm table** that includes for every alarm a memo displaying all the operations relative to the alarm and the **alarm history** that records all alarms and the associated treatment (date, duration, acknowledgment), integrating some **statistical functions** about failures and interventions. On option, the alarm and call history can be automatically exported in real time to an external database.

- **Alert** is able to perform an active supervision of its environment in order to detect an abnormal working of the supervised application or a dysfunction of the calling system (modems). This "**watchdog**" function can trigger calls like for events detected in the supervised application.

- **Alert** can guarantee a very high level of security while running in **redundant** mode (double installation). In this mode, stations supervise each other; only one station is in charge for the calls at a specific time. In case of failure of the active station, the other station automatically takes over from the first one, without any loss of information. The configuration of redundant stations is automatically synchronized.

- **Alert** can be entirely customized for user's category and to offer a work environment adapted to each operator: displayed menu and toolbar, accessible screens, authorized commands,

1.2 Functions

Basic functions of **Alert** are the following:

- Management of modems (telephone or GSM), ISDN controllers (compatible with the CAPI 2 interface) or specific call systems via the PC communication ports: direct handling of physical ports (COM1 to COM64) or throw the TAPI interface of Windows (modems installed in the Control Panel).

- Management of a user database which can contain until 999 operators: name, first name, identifier, password, language, user class, call numbers, on-duty / off-duty status, substitute, weekly program of call numbers. An operator can be declared as virtual in order to define a media used by several operators (e.g. mobile phone or pager).

- Management of on call groups, a group defining a list of operators who can be called to intervene on a specific alarm category ("Fire" group for example), with facility of relief group. Capability of command transmission to an external application to signal starting, success, failure or acknowledgment of the call of the group.

- Management of on call teams, a team corresponding to a list of operators who will be called either simultaneously or by rotation (according to option), with possibility of declaring relief operators to call in case of call failure.

- Management of a schedule table by group, each table defining the team schedule for a group over one year. The time periods can be defined with a resolution of one hour, a half of hour or a quarter of hour. It is possible to define "reduce duty" periods (time during which only important alarms trigger the call of operators). Weekly programs can also be defined (with holiday management) for the automatic affectation of teams in the schedule. Possibility of schedule derogation with option to redirect calls to a specific team. Management of team changeover possible (clock in and out) with option of mandatory team changeover for the strict control of the on-call teams.

- Definition of tags to supervise: type of tag (either simple variable, event, alarm or acknowledgment), reference, station (localization), functional group, polling mode (DDE or OPC tags). For event or alarm tags: transitory type or no, alarm condition (numerical or alphanumeric state) or threshold detection (absolute value or variation), weekly schedule for validation, numerical, alphanumeric and vocal messages, list of actions to perform. For alarm tags: priority, possibility to declare a masking alarm, text file containing instructions attached to the alarm.

- On alarm or event detection, or on return to a normal state, recording of the event in the event log. On alarm setting, recording of the alarm in the alarm table, with all contextual information associated.

- On event set or reset, or on alarm acknowledgment, possibility to execute a configurable list of actions : call of on-call groups, call of operators, execution of a sequence of commands, execution of a message processor script, launching of an application, playing of a vocal message on the local station.

- Triggering of calls using the available resources and the suitable media. For alarm calls, management of resumption procedures and call of relief operators in case of failure or no call acknowledgment.

- Transmission of alphanumeric, numerical or vocal messages. Possibility of formatting of alphanumeric message with static parameter (group, priority...) or contextual and dynamic information (current state or value of tags of the supervised application).

- Call acknowledgment (taking into account of the received call by the operator), either locally or at a distance by telephone (DTMF keys) or from a remote terminal.

- Alarm acknowledgment (taking into account of the alarm by the operator), either locally or at a distance by telephone (DTMF keys) or from a remote terminal. Possibility to acknowledge alarms either individually, by functional group or globally. Option of automatic alarm acknowledgment on event reset or group warned. On option, automatic synchronization of acknowledgments with the supervised application.

- Possibility of masking and unmasking of alarms, with date and operator's name recording. An alarm masking can be temporized (limit date and time). A comment can be attached to the masking operation. Possibility of automatic masking of an alarm by another one, in order to limit the avalanche effect following upon certain failures (e.g. power down).

- Possibility to dispatch service messages to the on call team or to any operator. Messages transmitted to an operator are recorded in its mail box. It is also possible to trigger file transfers to one or several stations as well as station synchronizations.

- Possibility to program calls of operators, at beginning or end of their on-call period, as well as cyclic calls or periodic calls (at a given time of a week day), with optionally an attached text file. Possibility of embedded dynamic values in the transmitted message or attached text file. Possibility to program cyclical or periodical files transfers or station synchronizations.

- Active surveillance of the supervised application by controlling the links with this last and possibility to perform a periodic request about specifics tags, in order to detect a no response (e.g. application crash). Possibility to set an alarm on link failure or no answer to a request.

- Active surveillance of calling systems (modems). Possibility to set an alarm in case of dysfunction of one of these systems.

- Management of an alarm table containing a time stamped list of actual and past alarms with their acknowledgment state. Every alarm recorded in the table is associated to a memo containing the alarm description (parameters and current state), instructions and contextual information (generated at event time), as well as the history of the different operations performed to alert operators (warned operators, call failures, acknowledgments, event reset). Comments and reports can be edited about the alarms present in the alarm table.

- Management of an alarm history containing the recording of all past alarms and their treatment: date and hour of detection, failure duration, name of the operator who has acknowledged it, its reaction and intervention time. Possibility of consultation or edition of comment or reports about the recorded alarms. The alarm history integrates some daily, weekly and monthly statistical functions on alarms, by group or for a particular alarm: number of failures, total failure duration, mean failure duration. It also integrates some daily, weekly and monthly statistical functions on operator interventions: number of interventions, mean time of reaction, mean time of intervention.

- Management of an event log containing a time stamped trace of all the events: user logins, alarms, calls, acknowledgments, etc. This event log can be printed

simultaneously. It can be also transmitted by DDE to client applications that requested it or to a designated DDE server application.

- Management of a logbook containing intervention reports of the operators. These reports can be either written or vocally recorded. They are automatically signed and time stamped, and they can be classified by topic. Reports can be especially attached to one or more alarms. A vocal report can also be done by telephone; a written report can be entered from a remote terminal.

- Automatic deletion of the oldest recording files (event log, history, vocal messages). The storage duration is configurable.

- Management of client stations (server version) to operate from any network station: schedule (consultation, configuration, derogation), alarms (consultation, acknowledgment, masking), history (consultation, statistics), journal (consultation), logbook (consultation, report edition), users and groups (creation and modification of users, groups and teams), supervision (edition and modification of the supervised variable list), etc.

- Built-in vocal server, with welcome message and vocal guide, allowing identification of the called or calling operator (by DTMF keys), listening to the alarm or service messages, alarm acknowledgment, recording of a vocal report, switching to remote terminal or callback request (callback forced on option). Operator identification results in the automatic acknowledgment of calls that has been addressed to him. The vocal messages (alarms, welcome…) can be recorded in local (if the P.C. is provided with a sound card and a microphone) or by telephone. The language and voice used by the vocal server can be selected. Automatic detection of an answering machine, with possibility to record a message and to switch automatically to the following number. Capability of call forwarding (automatic call of an operator followed by the call forwarding to a telephone station in order to establish a direct voice communication).

- Voice synthesis option (Text To Speech). This option avoids recording of alarm messages (automatic synthesis from the formatted alphanumeric alarm messages) and enhances the capabilities of the vocal server (configurable welcome message, customized welcome of operators, announcement of the alarm number, timestamp of alarms, integration of dynamic and contextual information in the vocal alarm messages).
An option allows presynthesis of messages to optimize the response time when a lot of alarms are triggered. The synthesized messages are saved and restored between each launching.

- Management of client stations (with the server option) to operate from any network station: schedule (consultation, configuration, derogation), alarms (consultation, acknowledgment, masking), history (consultation, statistics), journal (consultation), logbook (consultation, report edition), users and groups (creation and modification of users, groups and teams), supervision (edition and modification of the supervised tag list), etc.

- Terminal server associated, usable for the incoming calls and, via the vocal server, for the outgoing calls, from a PC (with a terminal emulation). Utilization of separated ports (incoming call only) or common to the terminal server and Alert. Acknowledgment of received calls, consultation of the alarm table with all associated information (instructions or contextual information), with possibility of acknowledgment, mask / unmask of alarms, event log consultation, consultation of the operator schedule and possibility for a sufficient level operator to modify the schedule of every group, consultation and modification of operator call numbers, consultation of service

messages sent to the operator, registration of a written report, file reading, with possibility of transmission (download or upload of files), remote supervision of the supervised application through synoptic screens and menus.

- Integrated management of external applications: manual launching from the menu, automatic launching at the initialization, automatic closure, automatic restart on closure.

- Management of an external "watch dog" variable allowing the automatic detection of an abnormal functioning of the Alert software.

- Options to preset the application behavior and customize it: title bar, type of window, locking of Windows tasks, archive duration, DDE and OPC parameters, colors, toolbar...

- Options to parameter the treatment of alarms and call cycles.

- Possibility to define a specific work environment by user's category: menu and toolbar displayed, accessible screens, authorized commands.

- The configuration can be saved under a name for a later restoration: environment parameters, list of supervised variables with all their parameters, organization of team and groups with the associated schedule, programmed calls and synchronizations. All the files are saved in a subdirectory labeled with the name of the configuration. The base directory can be selected on a network station. Option for the periodic saving of the configuration, history files and log file.

- Management of an interfacing module with the supervised application (Mediator module), allowing to optimally integrate the alert management in the application: import of alarm defined in the application with all their attributes (reference, messages, priority, group, etc.), alarm detection, reciprocal acknowledgment management, specific treatments, etc.

- A specific mediator (message processor) allows the treatment of messages that can be issued from a serial communication line or TCP/IP connection, from a database or a file, or from an email or a GSM transmitter (SMS), to retrieve event information and trig alarms.

- Management of redundant DDE and OPC servers. When a data server is out, the software is automatically connected on the following server in the list of the redundant servers of the failed server.

- Management of a redundant mode. In this mode, the software must be installed on 2 stations interconnected by a network. Only one station is active at one time and transmits calls. The two stations mutually supervise themselves. In case of failure of the active station, the secondary station takes automatically the control, without no loss of information (alarms in progress, acknowledgments...). The working and the configuration of the two stations can be automatically synchronized (alarms, acknowledgments, schedules, messages...).

- With the "Alert" driver, possibility of central management of remote stations equipped with the Alert software from one or several Alert central stations: transmission of alarms to the central stations (including event resets and alarm acknowledgments), cyclical or periodical transmission of files and synchronization of on-call schedules.

- Built-in management of an external remote control application (pcAnyWhere or Carbon Copy): Automatic launch of the remote control application on telephonic request of an authorized operator (via the Vocal Server), with release of the used communication port

(port sharing) and automatic recovery of the port at the end of the remote control session.

- Option for automatic and real time exportation to an external database of the alarm and call history and report log, with all the associated configuration data.

- Option for running as Windows service, allowing the software to be automatically launched at the system initialization, before all session opening.

- Programming interface (API) and ActiveX interface. These interfaces allow any application to interact with the software throw many functions: creation/deletion of objects (alarms, users, groups...), read/write of parameters, set/reset/acknowledgment of alarms, call of group or user...

1.3 News of the version 3.5 revision 1

The version 3 5 of **Alert** had introduced a **new user interface**, offering a structured and **synoptic view** of the whole supervised application and on-call management organization.

The revision 1 of the version 3.5 of the software, by developing certain aspects of the organization of the data and by correcting some weakness of the original version, still reinforce the possibilities offered by this interface:

- Extension of the station concept, allowing the management of **virtual stations**. The organization of the data in stations meets the need to define specific subsets for the management of operators and data attached to companies or sites. With the concept of virtual stations, this logical organization is now possible independently of the organization of the data acquisition: data can be recovered through a single frontal or database and then redistributed between the various stations according to their origin.

- Identification of the DDE and OPC **data servers**. The tags issued from the same data server (local or distant) are gathered in a branch of the tree structure, allowing to visually identify a problem of connection with a server and to perform specific operations on a server (start/stop polling, acknowledgment ...). For each data server, it is possible to define a list of redundant servers, able to ensure the data supply in the event of failure of the main server (or of the previous redundant server in the list).

- Redefinition of the organization of the functional groups: a group can now contain at the same time groups (old grouping) and tags. This organization makes it possible to define tags in all the levels of a tree structure of groups.

- Extension of the client OPC interface for a full integration of specificities of the **OPC** interfaces **Data Access V2** and **Alarm & Event**. New mediator OPC allows the static importation of the data to be supervised, while profiting from the possibilities offered by the OPC Data Access V2 specification of properties attached to a variable to retrieve automatically all information associated with an alarm (message, priority ...). This new mediator allows also the dynamic importation of alarms by the automatic creation of alarms at the time of their activation according to preconfigured filters.

- Improvement of the management of the operator **call numbers**: unlimited list of call numbers, customizable recovery options on the level of each number, graphical weekly schedule of the numbers to be used. Possibility of calling several numbers for the same operator (e.g. transmission of SMS + confirmation by phone call), automatic adaptation

of the numbers to dial when internal and external telephone line are simultaneously used.

- Improvement of the **graphical interface**: optimization of display, customization of the lists, sorting on columns, new columns (call following...).

- New contextual **on-line help**.

The archiving of the configuration data and the data exchanges performed during the synchronizations between the redundant stations and the server and client stations were completely modified. The archived and exchanged data are now structured in accordance with **standard XML**. This choice reinforces the interoperability of the software and offers a standardized access to all the configuration data of the application.

1.4   News of the version 3.5 revision 2

The revision 2 of the version 3.5 of the software proposes the following new functionalities:

- Option to run as Windows **service**. When this option is validated, the software is automatically registered as Windows service. It is then automatically launched at the system initialization and is operational even if no user session is open. (See § 8.6 : "Alert as service")

- **ActiveX** interface giving access to all the functions of the programming interface (API) of Alert.

- Extension of the **data server** concept to all the tags, other than DDE and OPC tags (mediator and other tags).

- New option "**Explicit call acknowledgment**" allowing a call to be explicitly accepted or refused. When a call is refused it is automatically reiterated to a relief operator.

- New Text To Speech interface allowing the new generation Text To Speech engines to be integrated (**SAPI5**).

- New communication drivers to call users throw an IP network (**VoIP** driver, SIP compatible) and usage of instant messaging (**MSN** driver).

2   FUNCTIONNING

2.1   Application supervision

Alert manages a list of tags to supervise, each entry of this list containing all necessary information for acquisition of the current state of the associated tag and for the treatments to perform when the tag goes into a specific state.

Tags declared in this list can be DDE or OPC items, in that case Alert takes in charge the polling of their current state. Either, they can be considered as simple reference; in that case they should be updated by explicit commands of an external application or through the suitable mediator module.

A tag can be handled as:

- A **simple variable**: the acquisition of its current value will be the only treatment in order to supply associated alarm with contextual information.

- An **event**, that will be recorded in the event log when the tag goes into a state declared as an event state and will optionally trigger a message transmission to the concerned operators.

- An alarm considered as a particular event that requires a human intervention. An alarm is recorded in the alarm table and must be acknowledged. It is signaled by a red indicator ALARM on the alarm status bar. An alarm can trigger the call of concerned operators, with procedure of resumption and relief in case of failure.

- An **acknowledgment**, to transmit an acknowledgment request either from the supervised application or from an external system.

Every variable has the following attributes:

- An **identifier**

  This identifier can be a simple name or the reference of the DDE or OPC link with the tag of the supervised application.
  A DDE reference always contains the name of the server application (service name), the name of the rubric (topic name) which contains the tag and the designation of the tag (item name). The DDE link is therefore defined by a triplet "service-topic-item".
  An OPC reference contains the name of the OPC server application and the reference of the tag within the server, under the form: "server\variable".
  The name of the DDE server or DDE topic can be replaced by an **alias**. This feature allows different tags to be referenced by using the same name (redundant configurations) or the link with a tag to be modified without having to change the **Alert** database.

- A **Station**

  The station attribute defines a subset of the application of on-call management corresponding to a specific entity, geographical (site) or organizational (company, trade

...). The definition of stations allows subsets of tags and operators to be treated separately, with all associated information (on-call schedules, alarm table, alarm history, event log).

According to the architecture of the application, one can choose one of the two following modes of management:

➢ **Alert stations**: the definite stations are attached to real remote stations, equipped with the Alert software and dealing autonomously with their data and alarm management, in synchronization with the main station.

➢ **Virtual stations**: the definite stations are virtually attached to specific entities (sites, companies...) but all the treatments (data acquisition, calls) are performed on the same computer.

- **Functional groups**

  The tags can be organized following a hierarchical structure of groups (e.g. countries, cities, buildings, machines, functions, applications, etc.); each group can itself contain a sub-tree structure of groups(buildings in cities in countries for example). This organization allows the synoptic visualization of subsets of the application as well as treatments by group in the working screens (acknowledgment of all alarms of a group, statistics by groups, etc.). A tag can belong to several groups. For each tag, one can select a basic group, who allows specific treatments: vocal message of identification of the group in alarms, grouping of message, etc.

- A **polling mode** (DDE or OPC variables only)

  DDE or OPC variables can be supervised either through a permanent connection, or a periodic reading. DDE variables can be punctually read on detection of an alarm in the group.

  The periodic reading of a variable allows an active surveillance of the application and the detection of any problem at the level of the connection or of the application itself.

A tag defined as **event** or **alarm** has in addition the following attributes:

- An **event condition**

  The tag is declared as event when its associated event condition is TRUE. This condition can be the change into a determined state, the threshold overtake (high or low) or a mask on a logical state of the tag (event bit).

  An event can be defined as transitory (pulsed event). In that case the return to normal state is implicit and not handled.

  A weekly schedule allows the definition of periods for event invalidation, alarm masking or call inhibition.

- A **multi-format message**

  An event can be associated to a numerical, alphanumeric and vocal message.

  The **numerical message** is only used for alarms in order to identify the alarm when calling operators provided with a numeric pager.

  The **alphanumeric message** is used to identify the event in the event log. It is also used for variables declared as alarms, to identify them in the alarm table and to inform the operator provided with an alphanumeric pager, a fax, a printer or a remote terminal. This alphanumeric message can be formatted in order to include some complementary static information (group, priority of alarm,) or dynamic data (value of associated tags).

  The **vocal message** is used to identify the event locally on the PC (on option), and for tags defined as alarms to identify them by telephone. This message can be recorded, by microphone or by telephone, or synthesized automatically from the formatted alphanumeric message if the "vocal synthesis from the text" option is available.

- An **action list**

  The activation of an event, its reset to normal state or the acknowledgment of an alarm, can trig the execution of a predefined list of actions: call of one or several **on-call groups**, call of designated operators, execution of a command sequence, execution of a script of the message processor, activation of an application, vocal message on the local station.

  For an alarm the call of an on-call group results in the trigger of a call cycle to the operators who belong to the group and who are currently on duty according to the group schedule. By default, this call will require a call acknowledgment (in order to suspend the call cycle). If the call does not succeed for certain operators, it can be resumed to relief operators. The call can be delayed in order to filter an event that will be treated as an alarm only if it persists a minimum time (a prolonged power failure for example).

A tag defined as **alarm** furthermore has the following attributes:

- A **priority level**

  The priority level characterizes the alarm importance. It can be set between 0 (the lowest priority by default) and 9999. The priority order can be reversed.

  The priority level is used to transmit alarm messages by order of decreasing importance (what allows the most important alarm to be transmitted when only one message can be transmitted by call). It also allows the calls concerning the most important alarms to be handled first when several alarms are simultaneously detected. It finally allows alarms to be discriminated in 2 categories: the important alarms requiring to be handled quickly, whatever the time, and the less important alarms that will not require an immediate call during periods defined as **reduce duty** (the night for example); according to an option, the no important alarms can be preserved in order to be treated at the end of the period of reduce duty.

- An option to **mask alarm by another alarm**

  An alarm can be masked by another one, in order to avoid an avalanche of alarms in certain circumstances (power failure for example). A masked alarm will be treated like a simple event, without triggering of call.

- An associated **text file** (option)

  This text file can contain instructions for the alarm treatment or contextual information acquired automatically at the alarm time. It can be consulted either locally in the alarm table or at a distance from a remote terminal. It can also be transmitted by fax.

- An **acknowledgment condition** (option)

  An acknowledgment condition (indicating that the alarm has been acknowledged) can be defined like an alarm condition. This acknowledgment condition can be relative to the content of the tag itself or to the content of an associated tag. This functionality allows **Alert** to be informed by the supervised application that the alarm has been acknowledged, and the consequent treatments to be performed (recording in event log, abort of the call cycle,).

  In addition, an option allows the acknowledgment condition to be reciprocally transmitted to the supervised application when the alarm is acknowledged from **Alert** (locally, by telephone or from a remote terminal).

- An **masking condition** (option)

  On the same way, a masking condition (indicating that the alarm has been masked) can be defined. This masking condition can be relative to the content of the tag itself or to

the content of an associated tag. This functionality allows **Alert** to be informed by the supervised application that the alarm has been masked.
In addition, an option allows the masking condition to be reciprocally transmitted to the supervised application when the alarm is masked from **Alert**.

Each time a tag declared as event or alarm changes of state (goes to event or return to normal), this change of state is time stamped and recorded in the event log (with possible copy on a line printer).

If it is a change to event state, the local operator can be warned by two audio consecutive messages:

- For alarms, a specific sound is played depending on the associated on call group (if the alarm option "play group tone" is validated and if a sound file is attached to the group).

- A vocal message identifying the event (if the option "talk voice message" is validated and if a vocal message is attached to the event). On option, that message can be repeated in a continuous loop until the alarm acknowledgment.

If the tag was declared as alarm, the following operations are done:

- Updating of the alarm table and alarm history.

- Updating of indicators (ALARM and ACK) on the alarm status bar.

2.2 User management

The list of operators who will be called to intervene (either locally or at a distance) is defined in the **user file**.

Every operator is defined by:

- His name and first name.
- His usual language.
- A real or virtual type.
- A numerical operator identifier (ID), 1 to 4 digits.
- A numerical access code (password), 0 to 4 digits.
- His user class.
- An off-duty option with or without substitute.
- A list of call numbers.
- Optionally,, a weekly program defining the automatic assignment of his call numbers.
- An option to be called on event reset.
- An option to be called on alarm acknowledgment.

The **name** and **first name** are used to identify the operator during a local access on the station (login). There are also used for recording in the event log events concerning him (calls, acknowledgments) and for intervention reports. When an operator has to identify himself he can enter his name, his name and his first name, or his name followed by the first letters of his first name.

The **language** of the operator specifies the language to use to transmit him the messages. If a message to transmit is not defined in the user language, it will be searched in the following priority order:

> ➢ in the language of the user interface, if it is defined in this language,
> ➢ in US English, if it is defined in this language,
> ➢ in the first available language for the message.

A **real operator** corresponds to a physical operator that can intervene locally or at a distance on the installation. A **virtual operator** corresponds to a communication media, used by several operators: shared pager or cellular phone, telephone set in a common local, etc. When a virtual operator is called in vocal, any real operator who belongs to the same on call group can identify himself instead of the virtual operator. On the same way, when the virtual operator is a pager, the real operator having received the message can call back in order to acknowledge the call. This functionality allows the identification of who really took in charge the call transmitted.

The **operator code** (**ID**), 1 to 4 digits, allows the operator to identify himself during telephonic communications by using the telephonic keyboard (DTMF codes).

The **access code** allows the operator to authenticate himself when he locally logs on to Alert or during the telephonic communications.

The **user class** (or **user profile**) defines the work environment of the operator. It can be easily configured and defines the menu and toolbar to display, the accessible screens and the authorized commands on each of these screens.

Three basic classes are defined, each class being associated with an access level between 0 and 2, characterized by the following features:

- *Operation (level 0)*

  The operator does not have access to the configuration of the application and cannot close the application.

- *Control (level 1)*

  The operator has access to the configuration of most parameters (alarms, schedules,), except the configuration of user parameters (user profiles and user database) and environment parameters.

- *System (level 2)*

  Maximal level, the operator has access to all functions of the application.

The **off-duty** option allows an operator to be temporarily removed from the calling procedure without having to modify the schedule tables. An operator can be set on/off duty selectively for each of the on call groups he is belonging to. That option can be set or reset from an external application..
When an operator is set off-duty, another operator can **substitute** him in each group he his belonging to. The substitute has in charge his duty and those concerning the off-duty operator.

A list of **call numbers** can be configured. Each call number is defined by the type of media to be used (beep, telephone, pager, fax, email…) and by the operator's address, in reference to the selected media (dial number, user identifier in paging system, email address...).

A call number belonging to the call number list can be designated as an **active number**. It is the first number that will be used. A second number can be designated as **relief number**. This second number will only be used if the call to the active number did not succeed, after a configurable number of attempts.

The numbers are called sequentially in the order of the list, the call cycle being ended with the first successful call of a final number. A **final number** is a number which requires a call acknowledgment, automatic or not.
In case a call failure, the call is reiterated a number of times configurable (globally or at the level of a specific number), after a time also configurable. After the configured number of unsuccessful attempts, the call is resumed with the following number of the list.

A **call acknowledgment** can be required (globally or at the level of a specific number). If the call acknowledgment is not automatic, a timeout for waiting the call acknowledgment can be defined with a number of reiterations of the call if no call acknowledgement is performed in the defined time.

The list of the numbers to call at a given time can be automatically established from a **weekly program of the call numbers**. This program defines the assignment of the call numbers for each day of the week and the public holidays, by time sections of 15 minutes. The program can be put in service (automatic change of the list of call numbers at each new period) or out of service (manual operation). Under automatic operation, it is possible to derogate temporarily from the current configuration by modifying it manually. This configuration will remain valid until the next period.

Every operator owns his **mail box** that stores the last 10 service messages that have been transmitted to him. The operator can consult and erase them, either locally, or at a distance by telephone (audio messages) or from a remote terminal.

An operator can be declared as **console** operator. This attribute allows a list of operators to be defined, these operators being able to receive specific messages via the DDE command "SendConsole" or the API function "AlertSendConsole". The messages transmitted by this way will be only sent if the operator is on-call. If the operator is not on-call, the messages will be stored and transmitted at the beginning of his on-call period, unless they have been acknowledged meanwhile (DDE command "AckConsole" or function "AlertAckConsole").

In the case of a multi **stations** management, the operators can be attached to a specific station or to all the stations. Operators with the same name can be defined on different stations.

Some operators can be destined to receive a full traceability of the alarms (activations, acknowledgments, returns to normal state). In that case, the **call options** on event reset and alarm acknowledgment have to be validated for the operators in question.

2.3 Group and team organization

Several on call groups can be defined, each one corresponding to a group of users having the same localization or competence (fire, security...).

A **group** is characterized by:

- An identifier name for the group.
- An operator list attached to the group.
- A specific audio signal (local alarm).

Operators belonging to a group must have been previously declared in the user file. An operator can simultaneously belong to several groups.

In a group, it is possible to create teams. A **team** is a set of operators who can be called to intervene simultaneously or by rotation (following option at the group level and at the team level) when an alarm concerning the group is detected.
By default, a team is created for every operator belonging to the group.

A team is defined by:

- The name of the team (by default it is the name of the first operator).

- A color allowing the team to be visually identified in schedule table..

- The list of operators making up the team.

In a team, some operators can be declared as **relief operators**. By default, these operators are called only when the main operators cannot be reached. The call order of relief operators is the list order. On option, it is possible to call one relief operator for each main operator not reached, in order to guarantee the intervention of a constant number of operators.

A **schedule** is defined for each group. This one is defined over a year from the previous month of the current month. A team can be programmed by time sections of 15 minutes minimum. A time period can be qualified as a period of **reduced duty**, indicating that during this time only the important alarms will be immediately treated.
A group schedule can be configured very easily with the mouse by positioning teams on the schedule table (by drag and drop operation).

The schedule of a group also can be automatically configured from its **weekly program**. This program defines the assignment of the teams for each day of the week and for the public holidays, by time section of 15 minutes. A team can be programmed in reduce duty or not.
This program is applied automatically for every new month. It can be manually forced from the current day and the current hour and for the eleven next months. When a program has been applied in the schedule table, it is still possible to modify it manually.

A group can be set in **derogation** state. In this state, calls concerning this group are redirected to a team of the group designated as a derogation team. If there is no designated team, calls are abandoned or suspended according to option. The derogation of a group can be temporized until a limit time or the next change of on-call team.

The change of the on-call team can be done through a declared **team changeover**. When a team executes a team changeover, it immediately starts its on-call period. On option, the team changeover can be mandatory. In this mode, each change of on-call team must be explicitly declared. In case of no changeover in a given time from the scheduled hour, an alarm can be trigged.

For a given group, it is possible to designate a **relief group**. This last will be called on alarm only if there is no active team in the schedule for the corresponding period or in case of failure of the call cycle of the main group. This possibility allows the definition of a secondary on call process for the group, independent of the main on call process of the group.
It is possible to cross the relief groups (a group can be designated as relief group of its own relief group).

When calling a group, it is possible to transmit **commands** to supervised application, or any other external application, to signal the starting, the success, the failure or the acknowledgment of the group call.

2.4 Call management

When a call is triggered to a group following an alarm, a call request is registered in the **list of groups to call**, with the cause of call. If the group was already under call (following a previous alarm), the new cause of call is added.

For each group added to the list of groups to call, the on-duty team is searched. If for a group, no team is on-duty, the search is resumed cyclically. When a team is found, the call is triggered to this one.

Following option, either the next operator to call (turnover option) or the list of active operators (not in relief) is extracted from the team to call. Only on-duty operators are called. Then a call request to these operators is registered in the **list of users to call**.

For each operator of the list of operators to call, the call procedure is triggered to the first valid number of the list of call numbers of the operator. If this call does not succeed, and after a configurable number of attempts, the call is reiterated to the next valid number in the list of call numbers of the operator, and so on. When the call succeeds, a temporization is triggered to wait for the call acknowledgment. At the end of this temporization, the operator call is reiterated, a configurable number of times. The call can be acknowledged either locally (by any operator) or from a distance by telephone or from a remote terminal, by the operator himself or, when the called operator is declared as virtual, by an operator belonging to the same group. If the call number is not declared as final number, no call acknowledgment is required and the call cycle automatically continues with the next number of the list.

The call of an operator is considered as **failed** when:

- there is no valid call number for the operator.
- the call did not succeed for any of his numbers, after the configured number of attempts.
- the call succeeded, but no call acknowledgment intervened in the specified time, after the configured number of reiterations.

In this case, according to option, the call cycle of the team can be either abandoned or reiterated after a configurable temporization.

A team is considered as **warned** when, according to the chosen option, either at least one operator of the team has been warned or when the required number of warned operators has been reached. However, if the alarm is not acknowledged in a defined delay, the call of the team (or the following in the schedule) can be reiterated.

If the timeout defined to acknowledge an alarm is null, the group is automatically removed from list of groups to call as soon as the on-duty team has been warned. Otherwise, the group remains in the list of groups to call so long that all alarms concerning this group have not been acknowledged.

At the time of the acknowledgment of an alarm, if this alarm is the last cause of call of a team, all calls concerning this team are abandoned

2.5   Control of working failures

In order to be reliable, an alert management system must be able to treat events in all circumstances. To guarantee a high level of security, it must control that the supervised application works correctly, that the link with this one is available and that it will be able to trigger the necessary calls when an alarm will be detected.

To insure the security of the whole system, **Alert** offers control functions on its environment:

Control of the application working and of the link with this one

Alert can detect a failure of the link with the application. This failure is materialized by the fault indicator of the alarm status bar ("LINK"), the "Supervision" led becoming red and by recording the "LINK FAILURE" in the event log. It also set to "1" the value of the DDEFAIL item of the **Alert** DDE server. This item can be self-supervised by **Alert** to produce an alarm.

In case of link failure with a DDE or OPC server, the connection can be automatically switched on a **secondary DDE or OPC server**.
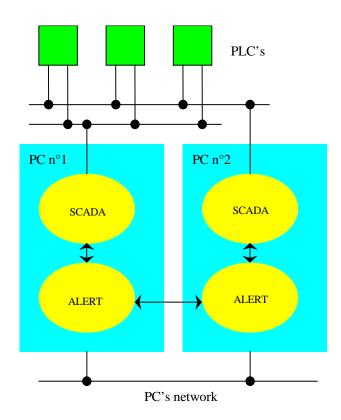
Alert also can perform periodical DDE or OPC requests (**watchdog**) for one or several variable. If there is no answer after the specified delay, a LINK fault is generated, as for a link failure. Besides, the alarm associated to the event is triggered.

Control of the working of call systems (modems)

Alert is able to detect a working defect of a modem on a communication port and to generate consecutively a communication port failure. This failure is materialized by the fault indicator of the alarm status bar ("MODEM"), the corresponding led becoming red and by recording the COM failure in the event log. It also set to "1" the value of the "PORTFAIL" item of the **Alert** DDE server. This item can be self-supervised by **Alert** for producing an alarm.

2.6   Redundant mode

To reinforce the security of the whole system, it is possible to use two computers in redundancy.

To perform a **full redundancy**, the **Alert** software and the supervision software (or the communication server with the PLC network) must be installed on each of the two computers, with the same configuration. The two computers supervises a unique database (the PLC network can be doubled) and are interconnected by a computer network.

Each of the **Alert** application supervises its own environment. As the PLC data base is the same, each computer detects the same alarms. In redundant mode, only the active computer transmits calls. Acknowledgements performed on a computer are automatically transmitted to the other one.

The determination of the active computer is automatic. The two computers supervise themselves reciprocally through the computer network. A computer considers itself in active state if there is no fault detected (communication with the supervisor OK and at least a communication system in service). If the two computers are active at the same time, the computer not declared as main station changes to the inactive state. The secondary station becomes active only when the main station becomes inactive or if it can not supervise this one normally (main station or network out of order).

It is possible to define some supervision tags as specific to one station (declared as "no redundant" tags). This allows the definition of events as specific to an environment or issuing from the other station. An alarm declared as no redundant triggers the call independently of the alert state (active or inactive) of the station.

The updating of the configuration of the two computers can be automatically synchronized: schedule tables, supervision list (redundant variables), messages, and alarm and call parameters. This synchronization can be configured.

To insure an optimal resumption when switching from a station the other, alarms, acknowledgments and call cycles can also be synchronized.

It is also possible to perform a **reduced redundancy** by installing only the **Alert** software on the secondary computer. This last will have for function to trigger an alarm call if the main computer goes in defect. The main station also can supervise the secondary station of the same way.

To trigger a call in case of defect of the main station (station out of order or incapable to call), it is enough to supervise the "REDUNDANCYFAIL" item of the DDE server of **Alert**, by declaring an alarm on this item (with the event condition "different of 0").

The redundancy can be reinforced by the declaration of **redundant data servers**.
For each data server used (DDE or OPC), it is possible to define one or more redundant servers. In case of failure of a data server, the software automatically restores the connections with the next data server in the list of redundant servers of the failed server.

3   INSTALLATION

3.1   Required configuration

The **Alert** software requires the Windows 32 bits environment (Windows 98, Windows NT, Window 2000 or Windows XP). The required hardware configuration is the one recommended for the used environment.

If this software is running with other applications and uses a lot of multimedia functionalities, it is worth better to provide with a well-dimensioned hardware configuration:

- Screen and Super VGA board (800x600), higher resolution advisable (1024x768 or more),

- 64 MB of memory available for Alert

- Hard disk with 500 MB minimum (storage of audio files, boards...), 2 GB with Text To Speech

- A sound card with loudspeaker and microphone (not necessary but recommended).

To call operators, it is necessary to add the appropriate hardware in accordance with the used media's:

- For the call directed to a local in site paging system, a simple serial link is sufficient,

- For the call directed to paging servers, Hayes modems mode are needed,

- For the vocal communications, it is necessary to use vocal modems.

The **Alert** software can also work on a network and communicate with applications located on other stations. In this case a network card has to be plugged.

3.2   Software installation

3.2.1   Standard or Server Station

To install the **Alert** software, execute the INSTALL.EXE program which is located on the installation CDROM then follow the displayed instructions.

A **Micromedia** group is automatically created and the **Alert** icon is added to this group.

The communication drivers that have been selected during the installation are loaded at the application launching, from the driver list described in the [drivers] entry of the **ALERT.INI** file, for example:

```
[drivers]
Fax=15,Fax.DLL,0,3
Printer=4,Printer.DLL,0,7
Beep=2,Beep.DLL,0,7
Tap=28,Tap.DLL,0,7
Ermes UCP=60,Ermes.DLL,0,7
GSM=1200,GSM.DLL,0,7
Videotex=30,Smin.DLL,0,3
Semaphone=16,Semaphon.DLL,0,7
Vodapage=38,Vodapage.DLL,0,7
Winpopup=50,Wpopup.DLL,0,6
Ascom=18,Ascom.DLL,0,7
Nira=13,Nira.DLL,0,7
```

This entry contains the list of drivers that can be used by the application. This list contains for each available driver:

- the driver name,
- an identifier numerical code (>0),
- the name of the file containing the DLL module,
- a code defining the mode to use for the driver,
- a management code for the driver (0 = not in any menu, 1 = in help menu, 2 = in configuration menu, 3 = in help and configuration menus). Bit 3 indicates that the driver is unused.

Drivers are automatically loaded at application starting.

3.2.2   Client Station

To install an **Alert** client station, one can execute the installation program which is located on the installation CDROM and follow the program instructions (by selecting the application "AlertClient").

It is also possible to install a client station through the network, by launching from the client station, the "AlertClient.exe" program which is located in the "ClientSetup" subdirectory of the **Alert** installation directory on the server station.

The **Micromedia** group is automatically created and the **AlertClient** icon is added to this group.

3.3 Access key

3.3.1 Hardware key

At the first launching of the Alert software, if the hardware key (dongle) associated to the software is plugged on a parallel port of the PC, an installation code is required. This code, which depends on the serial number registered in the key and the ordered software options, is written on the registration card. After this code has been entered, the software is automatically registered with the corresponding options. It will not be required later.

It will be later always possible to modify the installation options by entering a new installation code in the registration dialog box (called from the "About" dialog box).

3.3.2 Software key

If the hardware key (dongle) is not plugged at the software launching, a dialog box signals that the dongle is not detected.

If the operator clicks on the button "Ignore", the "About" dialog box is displayed. It indicates that the software is not registered and that it will only function in demonstration mode for 60 minutes. It is possible at that time (or later by selecting again the "About" dialog box) to register the software in order to use it without dongle, by clicking on the "**Registration…**" button.

A new dialog box then is displayed asking for an **installation code**. This code is dedicated to the software and depends on the PC's environment on which it is installed. The operator must note the **environment code** of its PC then call its supplier to get the corresponding installation code.

After the installation of the software with the adequate installation code, the next application launching won't generate anymore the message box concerning the dongle and the "About" dialog box. This is true only if the PC's environment is not modified (change of motherboard, change of disk, Windows reinstallation…).

Note: **AlertClient** software can be freely installed on any station of the network. It does not need any software or hardware key.

4 USER INTERFACE

4.1 Login

4.1.1 Standard or Server Station

To have access to services provided by the application, the operator has to log on to **Alert**.

To do so, at the starting of the application, or when the application has been freed by a previous operator, you only have to select the **Login** command from the **File** menu, or simply to click on the button:

A dialog box requires the operator to identify himself by his name and his access code. This one must enter his name (always forced in capitals) followed by his first name (that can be shorted). The access code of the operator must be supplied, if it exists.

When the station management mode is defined as "Virtual stations" (see § 7.1 *General options*") or, in the opposite case ("Alert stations""), if the local station (fist station) is defined as "Main Station", a dropdown list "**Station**" allows the selection of the station to display. In the case of Alert stations, only the synchronizable stations (stations defined with a user having the name of the station and associated with a communication driver of type ALERT) are proposed in the list. The choice "(all)" gives access to the data of all stations.

If a station is selected, the name of the selected station is displayed in the status bar on the bottom of the main window, and only the data of this station will be accessible: configuration data for on-call management and supervision, on-call schedule, alarm table, alarm history and event log. It is possible to change the selected station later in the display options (see § 7.3).

If the name and the access code are recognized, the application is opened for the operator in question and offers to him all services authorized for his user profile.

Note 1

At the **first start of the application**, and so long as no operator has been configured, the operator must identify himself with the temporary name "**ALERT**". This access has the higher level ("system" profile), and allows the configuration of the user file.

Note 2

It is possible to authorize a working mode said "without login" (see the login options, § 7.1 "*General options*") which allows some limited operations to be enabled without having to be logged: call or alarm acknowledgment, alarm masking/unmasking, edition of an alarm comment or report, call transmission…
In this mode, every command that requires the designation of the responsible user for the performed action (acknowledgment, masking…) provokes the display of a dialog box to

get the name of the user and his/her password. The command will be only accepted if the profile of the designated user authorizes it.

4.1.2 Client Station

To have access to services provided by the **Alert** server application from a client station, the operator has to identify and authenticate himself in the same way as on the server station. But during this operation he will have to designate the server computer onto he wants to connect, either with the station name or directly with its IP address. The server station can be browsed among the network stations (button on the login dialog box). If the IP port number has been modified on the server station (2495 by default, can be modified in the redundancy options), the new port number will also have to be entered.
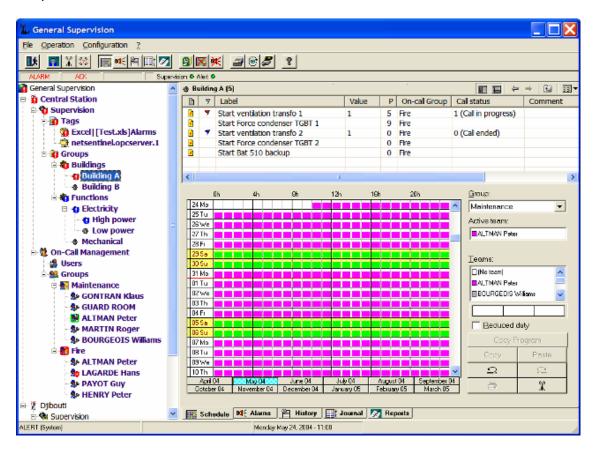
When the connection is successfully completed, all the server connection parameters are saved. On the next connections one only have to select the wanted server station in the dropdown list of the login dialog box.

If the **Auto connect** option is checked, the client station will automatically try to connect again to the selected server in case of failure at the connection time or in case of unwanted disconnection.
If several servers have been connected with the **Auto connect** option, the client station will automatically search for the first active server.

4.2   User interface

Once identified (see § 4.1 *"Login"*), the operator is in front of the following screen (some menus or buttons can be masked according to the user profile and the configuration of this one).

This screen includes:

- A configurable **title bar** allowing the alert station to be named.
- A **menu bar** containing all the commands of the application.
- A **tool bar** offering a quick access to the commands.
- An **alarm status bar** allowing the visualization of the general working state.
- A **general status bar** at the bottom of the screen.

The central part of the display constitutes the main screen, made up of threes parts:

- On the left part, a **topographical representation** of the application, under the form of a tree of the stations with sub-trees for description of the supervision and on-call management attached to each station.
- On the top right part, a **synoptic view** of the entity selected in the tree (station, list of supervised tags, functional group, user list, on-call group, team, …).
- On the bottom right part, a **tabbed application window** (on-call schedule, alarm table, alarm history, event log, logbook).

4.3   Menus

The main menu gives access to the main available function of the software. Some commands of the main menu are accessible more quickly from the buttons of the toolbar (see § 4.4 *"Toolbar"*). In addition, on the tree of the main screen and its associated view, contextual menus give a direct access to commands dedicated to the selected entities (see § 4.6 *"Main screen"*).

Menus depend on the profile of the logged user and on the configuration of this profile. The menus marked (1) below are accessible only to an operator declared with a "control" or "system" profile (in standard configuration), those marked (2) are accessible only to an operator having a "system" profile (in standard configuration).

File menu

Logout...	Operator leaves the application (without closing it)
(1) **Links**	Control of DDE and OPC links: closure or restoration of links with the supervised application
(2) **New**	Erase the current configuration
(2) **Open...**	Open a saved or remote configuration
(2) **Save As...**	Save the current configuration
(1) **Print...**	Printing of configuration tables
(1) **Printer setup...**	Selection and configuration of the printer
(1) **Line printer...**	Selection and configuration of the line printer (trace)

(1) **Line printer setup...**	Selection of event types to trace on the line printer
(1) **Trace...**	Configuration of options for debug trace
(1) **Exit**	Closure of the application
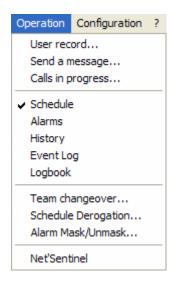
Operation menu

User record...	Consultation of the record of logged user
Send a message...	Send a service message or files to one or several operators
Calls in progress...	Consultation and acknowledgment of current calls
Schedule	Display and modification of schedules
Alarms	Display and acknowledgment of alarms
History	Display of history and statistics
Event log	Display of the event log (journal)
Logbook	Display of logbook and report edition
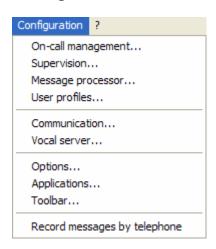
Team changeover...	Team changeover (Begin/End of on-call period)
Schedule derogation...	Set or reset the derogation state of on call groups
Alarm Mask/Unmask...	Mask or unmask alarms

Configuration menu

On-call Management...	Configure on call management (operators, groups, teams...)
Supervision...	Configure list of tags to supervise
(1) **Message processor...**	Configure the message processor [4]
(2) **User profiles...**	Configure the user profiles
Communication...	Configure the communication parameters
(2) **Vocal server...**	Configure the vocal server
(1) **Options...**	Configure the application options

(1) **Applications...**	Configure the list of associated applications
(2) **Toolbar...**	Customize the tool bar
(1) **Record messages by telephone**	Indicate the messages recorded by telephone are to be keep (alarm messages)
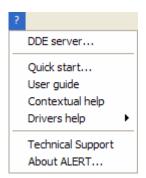
---

[4] The "Message processor..." command is only displayed when the message processor is activated

---

Help menu (?)

(2) DDE Server...	List of available item for the DDE clients
Quick start...	Display of the quick start guide
User guide	Display of the application user guide
Contextual Help	Display of the contextual help screen
(1) Drivers help	Display of the user guide of drivers
Technical Support	Display a HTML page which contains information (telephone numbers, hyperlinks) about Technical Support
About ALERT...	Display miscellaneous information (version, copyright)

4.4 Toolbar

The toolbar can contain the following buttons, subject to the validation of the corresponding menu commands in the profile of the current user:

Button	Action
or	User login / logout
	Consultation of the record of logged user
	Send a service message to one or several operators
	Consultation and acknowledgment of calls in progress
	Display group schedules (consultation and updating)
	Display alarm tables (consultation and acknowledgment)
	Display alarm history and statistics
	Display the event log (journal)
	Display the logbook (consultation and report edition)
	Team changeover (Begin/End of on-call period)
	Set / Reset schedule derogation
	Mask / Unmask alarms
	Configure on call management (users, groups, teams)
	Configure list of variables to supervise
	Configure communication parameters
	Display a contextual help

This toolbar can be customized (see § 7.8 "*Toolbar customization*")

4.5   Status bars

The application displays two status bars:

<u>An alarm status bar</u>

Located at the top of the screen, under the toolbar, including 3 (or 4) textual indicators and LED's indicating the status of the connection with the supervised application and of each of the communication ports:

➢ ALARM indicator: at least on alarm is active in the alarm table

➢ ACQUIT indicator: at least a non acknowledged alarm in the alarm table

➢ FAULT indicator:

"LINK"	Link failure with the supervised application
"MODEM"	At least one communication port failed
"DEROG."	At least one on cal group in derogation state
"ENREG."	The vocal server is preset to record vocal messages by telephone

➢ Number of connected clients (server station only)

➢ "**Supervision**" LED: indicates the status of the link with the supervised application:

● gray	connection is not established
● yellow	connection is in progress
● green	connection is established and is working normally
● red	connection is failed

➢ "**Alert**" LED: indicates the working status of the station (calls transmitted or not)

● green	the station is active, alarms are processed normally
● red	the station is inactive (redundant mode) and doesn't call on alarm

➢ "**Redundant**" LED: indicates the status of the link with the redundant station, displayed only when the redundant mode is selected:

● gray	connection with the redundant station is not established
● yellow	connection is in progress
● green	connection is established and is working normally
● red	connection is failed

➢ "**COM**x" LED's: indicate the current status of communication port (or connected modem):

● gray	port is not used
● dark gray	port is being initialized
● green	port is available for calls
● red	port failure (cannot be open or out of order)
● yellow	an incoming or outgoing call is in progress
● orange	data connection established (pager, printer, remote terminal)

- purple   vocal connection established
- dark yellow   port is being disconnected

A general status bar

At the bottom of the screen, including 3 windows and a message zone:

➢ 1st window: name of the locally logged operator (with name of its class in brackets)

➢ 2nd window: name of the station selected at login time or in the display options.

➢ 3rd window: current date and hour

➢ right part: zone to display help or service messages

4.6   Main screen

The main screen displays a browser like synoptic view of the supervised installation and on-call management. It allows a continuous and optimal control of the application and proposes a lot of tools for operation and analyze.

This screen is made up of threes windows and a browsing bar.

The **left window** of the main screen displays a **topographical representation** of the whole application, under the form of a tree of stations, with for each station, the corresponding sub-tree for the representation of the supervised data (supervision) and the organization of the staff in charge of the surveillance (on-call management).
Graphical symbols allow the system state to be showed at one sight (alarms, link failures, unreachable on-call groups, active teams …).

The **right window** located on the **top part** of the screen displays a synoptic view of the entity selected in the tree (station, list of supervised tags, tag groups, operators, on-call group, team …).
According to the views, graphical symbols allow an immediate identification of the active or unacknowledged alarms, off duty or relief users, active or unreachable teams, etc.
The graphical representation of each view can be modified (list, small or large icons, …). For each view represented under a list form, it is possible to select the columns to display by clicking with the mouse right button on the header line of the list. The size and the order of the columns can be modified by respectively dragging column separators or column headers.

The **right window** located on the **bottom part** of the screen displays various application screens that can be selected by tabs (or by the display commands of the main menu or buttons of the toolbar):

"**Schedule**"   On-call schedule of the group selected in the screen (see § 6.1 "*On-call schedule*").

"**Alarms**"   Table of alarms present in the supervised application (see § 6.2 "*Alarm table*").

"**History**"   History and statistics on the alarms and user interventions (see § 6.3 "*Alarm history*").

"**Journal**"   Journal displaying the event log (see § 6.4 "*Event log*").

"**Reports**"   Logbook containing reports recorded by the users (see § 6.5 "*Logbook*").

A browsing bar located above the synoptic view identifies the selected view and can be used to quickly browse through the various views. It also gives the choice among various graphical representations.
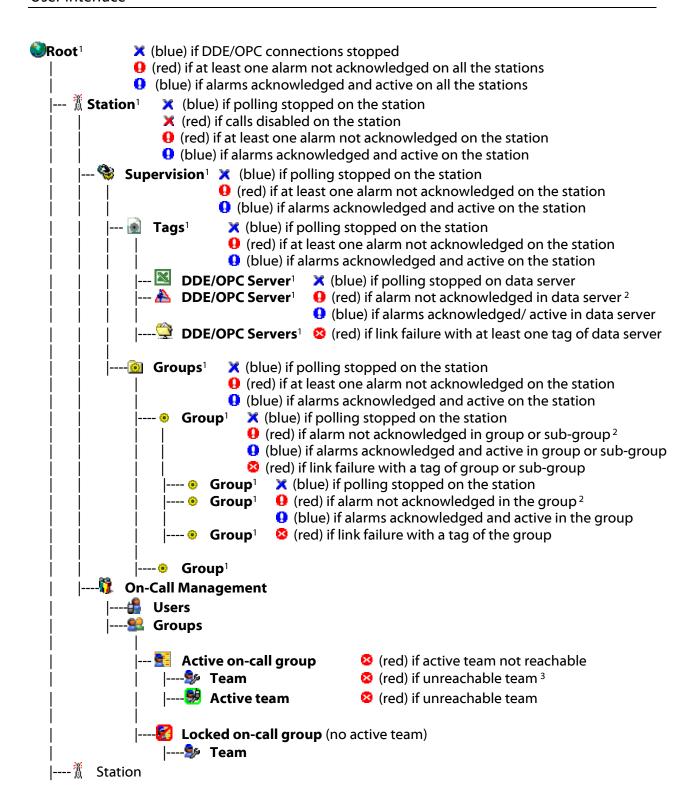
The size of each window can be adjusted by moving the mouse cursor on the vertical or horizontal split bar between the windows (cursor ↔ or ↕ displayed), clicking on the left button of the mouse then dragging the cursor in the wished direction, keeping the mouse button pressed.

Note: it is possible to suppress the topographical representation of the application (with the associated synoptic views) to return to a display compatible with the previous versions (before the version 3.5):

- Either generally for all the users by unselecting the "Mapping display" option in the starting options (see § 7.1.1 "*Starting parameters*").

- Or for a specific user profile by unselecting the menu entry "Supervision Mapping" of the "Operation" menu for the concerned profile(s).

4.6.1   Topographical representation

The displayed tree architecture is as shown on the next page:

Root[1]   ✖ (blue) if DDE/OPC connections stopped
| ❶ (red) if at least one alarm not acknowledged on all the stations
| ❶ (blue) if alarms acknowledged and active on all the stations
|--- **Station**[1]   ✖ (blue) if polling stopped on the station
| | ✖ (red) if calls disabled on the station
| | ❶ (red) if at least one alarm not acknowledged on the station
| | ❶ (blue) if alarms acknowledged and active on the station
| |--- **Supervision**[1]   ✖ (blue) if polling stopped on the station
| | | ❶ (red) if at least one alarm not acknowledged on the station
| | | ❶ (blue) if alarms acknowledged and active on the station
| | |--- **Tags**[1]   ✖ (blue) if polling stopped on the station
| | | | ❶ (red) if at least one alarm not acknowledged on the station
| | | | ❶ (blue) if alarms acknowledged and active on the station
| | | |--- **DDE/OPC Server**[1]   ✖ (blue) if polling stopped on data server
| | | |--- **DDE/OPC Server**[1]   ❶ (red) if alarm not acknowledged in data server [2]
| | | | ❶ (blue) if alarms acknowledged/ active in data server
| | | |---- **DDE/OPC Servers**[1]   ✖ (red) if link failure with at least one tag of data server
| | |
| | |---- **Groups**[1]   ✖ (blue) if polling stopped on the station
| | | | ❶ (red) if at least one alarm not acknowledged on the station
| | | | ❶ (blue) if alarms acknowledged and active on the station
| | | |---- **Group**[1]   ✖ (blue) if polling stopped on the station
| | | | | ❶ (red) if alarm not acknowledged in group or sub-group [2]
| | | | | ❶ (blue) if alarms acknowledged and active in group or sub-group
| | | | | ✖ (red) if link failure with a tag of group or sub-group
| | | | |---- **Group**[1]   ✖ (blue) if polling stopped on the station
| | | | |---- **Group**[1]   ❶ (red) if alarm not acknowledged in the group [2]
| | | | | ❶ (blue) if alarms acknowledged and active in the group
| | | | |---- **Group**[1]   ✖ (red) if link failure with a tag of the group
| | | |
| | | |---- **Group**[1]
| | |---- **On-Call Management**
| | |---- **Users**
| | |---- **Groups**
| | |
| | |--- **Active on-call group**   ✖ (red) if active team not reachable
| | | |---- **Team**   ✖ (red) if unreachable team [3]
| | | |---- **Active team**   ✖ (red) if unreachable team
| | |
| | |---- **Locked on-call group** (no active team)
| | | |---- **Team**
| |---- **Station**

---

[1] Customizable icon
[2] Flashing if call in progress
[3] No reachable operator (user off duty or without valid dial number)

4.6.1.1   Root

The **root** of the tree provides a synoptic view of the whole stations controlled by the application.

Its contextual menu allows the creation of new stations and the configuration of the general options of the application. It also allows the root icon to be modified.

Tree menu

Acknowledgement	Acknowledgment of all alarms of the application (all stations).
Polling	Stop / Restore the DDE/OPC connections.
Add a station	Creation of a new station (see § 5.12 "*Station properties*").
Paste	Add one or more station(s) first copied, with the name "copy<n> of <name of the copied station>".
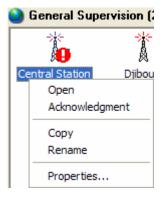
Properties	Edition of the properties of the root (icon change).
General options	Edition of the general options of the applications (see § 7.1 "*General options*").

Associated view menu

Open	Opens the station in the tree (see below).
Acknowledgement	Acknowledgment of all the alarms of the selected stations.
Synchronize	Synchronization of the selected stations with the local main station (see § 6.11 "*Station synchronization*").
Copy	Copy data of the selected stations to the clipboard for duplication by a later paste on the root of the tree.

Delete	Deletion of the selected stations. If data are attached to the stations (tags, tag groups, users, on-call groups), a confirmation is required. The local station (first station) cannot be deleted.
Rename	Change the name of the station.
Properties	Edition of the properties of the station (see § 5.12 "*Station properties*").

4.6.1.2   Station

Each **station** branch displays in its sub-tree the whole information relative to the corresponding station, from 2 main branches: a **supervision** branch for the data owned by the station and an **on-call management** branch for the on-call management specific to the station.
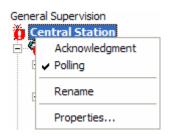
For each station, it is possible to hide one or the other branch (see § 5.12 "*Station properties*").

The icon of each station can be customized by using the ***Properties*** command of the associated contextual menu.

The order of the stations in the tree can be customized. The local station is always displayed on the top of the tree and cannot be moved.
To move a station in the tree, click on its icon with the mouse left button, drag the icon (keeping the mouse button pressed) over the station icon AFTER which the dragged station is wished to be moved, then release the mouse button.

Tree menu

Acknowledgement	Acknowledgment of all alarms of the station.
Synchronize	Synchronization of the station with the local main station (see § 6.11 "*Station synchronization*"
Polling	Stop / Restore the DDE/OPC connections of the station.

Copy	Copy data of the selected stations to the clipboard for duplication by a later paste on the root of the tree.
Delete	Deletion of the station. If data are attached to the station (tags, tag groups, users, on-call groups), a confirmation is required. The local station (first station) cannot be deleted.
Rename	Change the name of the station.
Properties	Edition of the properties of the station (see § 5.12 "*Station properties*").

Associated view menu

Open	Opens the supervision or on-call management sub-tree (according to the selection).
Acknowledgement	Acknowledgment of all alarms of the selected station.
Properties	Edition of the properties of the supervision sub-tree (icon change).
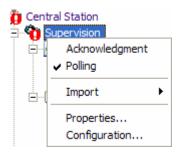
4.6.1.3   Supervision

The **Supervision** branch displays in its sub-tree the whole information relative to the supervision of the parent station, from 2 main branches: a **Tags** branch which contains the whole list of the supervised tags and a **Groups** branch which displays a topographical functional description of the organization of the supervised tags.

Tree menu

Acknowledgement	Acknowledgment of all alarms of the selected station.
Polling	Stop / Restore the DDE/OPC connections of the station.
Import	Importation of the supervision list from the OPC mediator. If a mediator is selected in the supervision options (see § 7.2 *"Supervision options"*), a submenu proposes the selection of the mediator in question ("M_XXXXXX") or the OPC mediator ('OPC').
Properties	Edition of the properties of the supervision sub-tree (icon change).
Configuration	Configuration of the supervision list (see § 5.9 *"List of tags to supervise"*).

Associated view menu

Open	Opens the list of tags (or of groups according to the selection) in the tree.
Acknowledgement	Acknowledgment of all alarms of the selected station.
Properties	Edition of the properties of the list of tags or groups (icon change).

4.6.1.4   Tags

The **Tags** branch displays in the associated synoptic view the whole supervised tags that are attached to the parent station.
It also displays in its sub-tree the list of the data servers (DDE and OPC) referred to in the tag list.

The type and the status of a tag are represented by icons. In the report representation, the column ▯ (1st column by default) displays the type of the tag and the column ▼ (2nd column by default) displays its status. In the other views, each tag is represented by an icon resulting from the juxtaposition of the icons representative of its type and its status.

The type of a tag is symbolized by the following icons:

Variable	
Event	
Alarm	
Masked alarm	

The status of a tag is signaled by the following symbols:

	DDE or OPC tag not polled
	Invalid tag (server out of order, unreliable value ...)
	Event active
	High priority alarm, active not acknowledged
	Low priority alarm, active not acknowledged
	Alarm active acknowledged
	High priority alarm, reset not acknowledged
	Low priority alarm, reset not acknowledged

In the report representation, the current value is displayed and updated in real time. When the value is not valid (link failure or data not yet read), the value is represented by a question mark (**?**).

Note: the representation of the displayed value depends on the defined event condition for the tag (of type event or alarm). If the value defined for the comparison is numerical (1st character numeric), the displayed value will be numerical. Particularly, if the value is received as an alphanumeric string, the displayed value will be the result of the numeric conversion of the received string.

The tags of type alarm can be directly acknowledged or masked from this view with the capability of multi selection for the acknowledgment or masking of groups of alarms. Comments can be typed about the present alarms or when masking alarms. These comments are displayed in the report representation of the view.

The **Tags** view can be used for the configuration of the list of tags to supervise. New tags can be easily added:

- By selecting the **Add a Tag...** command in the contextual menu of the branch or view. A first dialog box is displayed to enter the tag reference or to browse it in an external application (see § 5.10 "*Selection of an external tag*"). When the reference is defined, a new dialog box allows the parameters of the tag to supervise to be configured (see §
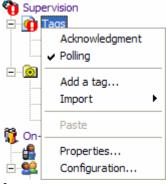
5.11 "*Tag properties*"). The default parameters of the created tag (type, event condition, action list …) are those of the tag which was selected in the view.

- By selecting the **Paste** command in the contextual menu of the branch or view, to create a DDE type tag. Before that operation, the pasted tag has to be copied from a DDE server application ("LINK" format). A dialog box allows the parameters of the tag to supervise to be configured (see § 5.11 "*Tag properties*").

This view also can be used as starting base for assignment of tags to the defined supervision groups:

- By "drag-and-drop" operation: tags to assign to a group are selected [1] in the view then dragged with the mouse over the tree branch that corresponds to the wanted group. This operation does not remove the selected tags from the tag list, even if the CTRL key is pressed when releasing the mouse button (cursor "+" always displayed during the dragging operation).
- By "copy / paste" operation: tags to assign to a group are selected [1] in the view then copied in the clipboard using a XML format ("Copy" command of the contextual menu). These tags can after be pasted in various groups.

The order of the tags in the list can be modified. To move a tag, click on its line with the mouse left button, drag it, keeping the mouse button pressed, over the tag line AFTER which the dragged tag is wished to be moved, then release the mouse button.

Tree menu

Acknowledgement	Acknowledgment of all alarms of the selected station.
Polling	Stop / Restore the DDE/OPC connections of the station.
Add a tag	Creation of a new tag (see § 5.10 "*Selection of an external tag*" and § 5.11 "*Tag properties*").
Import	Importation of the supervision list from the OPC mediator. If a mediator is selected in the supervision options (see § 7.2 "*Supervision options*"), a submenu proposes the selection of the mediator in question ("M_XXXXXX") or the OPC mediator ('OPC').
Paste	Creation of a new tag using a DDE reference that was prior copied in the clipboard ("LINK" format) from a DDE server application (see § 5.11 "*Tag properties*").
Properties	Edition of the properties of the tag list (icon change).
Configuration	Configuration of the supervision list (see § 5.9 "*List of tags to supervise*").
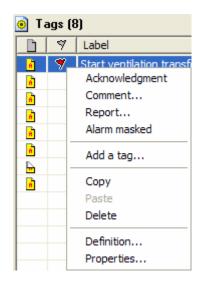
---

[1] To select a set of contiguous tags, keep the SHIFT key pressed during the selection. To select disjoined sets of tags, keep the CTRL key pressed during the selection.

Associated view menu

⊙	**Tags [8]**	
📄	🔽	Label
🗎	🔽	Start ventilation transf
🗎		Acknowledgment
🗎		Comment...
🗎		Report...
🗎		Alarm masked
🗎		Add a tag...
🗎		Copy
🗎		Paste
		Delete
		Definition...
		Properties...

Acknowledgement
Acknowledgment of selected alarms[5].

Comment   Add a comment about the selected alarms[16].

Report   Edit a report about the selected alarms. Consultation of the report when a report already exists for only one of the selected alarms[12].

Alarm masked   Masking / Unmasking of selected alarm tags (see § 6.15.1 "*Masking / Unmasking alarms*").

Add a tag   Creation of a new tag preset with the parameters of the selected tag (see § 5.10 "*Selection of an external tag*" and § 5.11 "*Tag properties*").

Copy   Copy the properties of the selected tags to the clipboard (XML format) for later paste in groups.

Paste   Creation of a new tag using a DDE reference that was prior copied in the clipboard ("LINK" format) from a DDE server application (see § 5.11 "*Tag properties*").

Delete   Deletion of the selected tags. After confirmation, the tags are definitively deleted.

Properties   Edition of the tag properties (see § 5.11 "*Tag properties*").

---

[5] This command is available only for the tags in alarm.
[6] This command is available only when the option **Database export** is validated (see § 7.1 "*General options*").

4.6.1.5   Data servers

The **Tag** branch displays in its sub-tree the list of data servers (DDE and OPC) referred to in the tag list.

Each data server is represented in a sub-branch of the **Tag** branch, by a customizable icon and the name of the data server, with its network path if the server is located on another computer.

The associated view displays all the tags attached to the server under the same format than in the **Tag** branch.

New tags can be easily added to a data server by selecting the **Add a Tag...** command in the contextual menu of the branch or view. A first dialog box is displayed to enter the tag reference or to browse it in an external application (see § 5.10 "*Selection of an external tag*"). When the reference is defined, a new dialog box allows the parameters of the tag to supervise to be configured (see § 5.11 "*Tag properties*"). The default parameters of the created tag (type, event condition, action list …) are those of the tag which was selected in the view.

This view also can be used as starting base for assignment of tags to the defined supervision groups:

- By "drag-and-drop" operation: tags to assign to a group are selected [1] in the view then dragged with the mouse over the tree branch that corresponds to the wanted group. This operation does not remove the selected tags from the tag list, even if the CTRL key is pressed when releasing the mouse button (cursor "+" always displayed during the dragging operation).

- By "copy / paste" operation: tags to assign to a group are selected [1] in the view then copied in the clipboard using a XML format ("Copy" command of the contextual menu). These tags can after be pasted in various groups.

The order of the tags in the list can be modified. To move a tag, click on its line with the mouse left button, drag it, keeping the mouse button pressed, over the tag line AFTER which the dragged tag is wished to be moved, then release the mouse button.

The polling of a data server can easily be suspended and reactivated by using the **Polling** command in the contextual menu of the corresponding branch.

The icon of each data server can be customized by using the **Properties** command of the associated contextual menu.

---

[1] To select a set of contiguous tags, keep the SHIFT key pressed during the selection. To select disjoined sets of tags, keep the CTRL key pressed during the selection.

Tree menu

Acknowledgement

Acknowledgment of all alarms of the selected data server.

Polling Stop / Restore the connections with the data server.

Add a tag Creation of a new tag attached to the selected data server (see § 5.10 "*Selection of an external tag*" and § 5.11 "*Tag properties*").

Import Importation of the supervision list from the OPC mediator, with preset of the selected data server. This command is only available for OPC data servers.
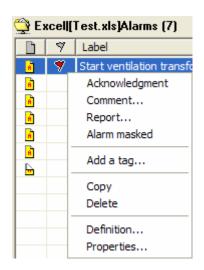
Delete Deletion of all tags of the selected data server.

Properties Edition of the properties of the data server (icon change).

Associated view menu

Acknowledgement

Acknowledgment of selected alarms [7].

Comment Add a comment about the selected alarms [1][8].

Report Edit a report about the selected alarms. Consultation of the report when a report already exists for only one of the selected alarms [1][2].

Alarm masked Masking / Unmasking of selected alarm tags (see § 6.15.1 "*Masking / Unmasking alarms*").

Add a tag Creation of a new tag attached to the selected data server and preset with the parameters of the selected tag (see § 5.10 "*Selection of an external tag*" and § 5.11 "*Tag properties*").

Copy Copy the properties of the selected tags to the clipboard (XML format) for later paste in groups.

Delete Deletion of the selected tags. After confirmation, the tags are definitively deleted.

Definition Edition of the external reference of the tag (see § 5.10 "*Selection of an external tag*").

Properties Edition of the tag properties (see § 5.11 "*Tag properties*").

---

[7] This command is available only for the tags in alarm.
[8] This command is available only when the option **Database export** is validated (see § 7.1 "*General options*").

4.6.1.6   Tag groups

The **Groups** branch displays a functional topographical description of the organization of the supervised variables. This description is made by the definition of a hierarchical structure of groups (e.g. countries, cities, buildings, devices, functions, applications, etc.). A group can contain a sub-tree of groups (e.g. buildings in cities in countries).

Each **group** branch displays in its associated view a set of the tags attached to the group (in black) or to one of the groups of its sub-tree (in yellow-green). This organization allows the synoptic visualization of application subsets as well as treatments by group in the application screens (acknowledgment of the whole alarms of a group, statistics by group, etc.).

A tag can belong to several groups. For each tag, a **basic group** can be selected, which offers the following specificities:

- It is possible to incorporate the name of the basic group in the alarm message of the tag by inserting the string "&G" in the associated message format.

- It is possible to define a vocal message for each basic group. This message, when defined, will be played before the audio message associated with the event. It even can replace it if this last is not defined.

- It is possible to perform only one call for all the alarms of the basic group when this option is validated at the level of the used communication driver.

- All the alarms of a basic group can be simultaneously acknowledged by a communication driver (vocal ...)

The basic group of a tag is designated in the **Group** field of the tag properties dialog box (see § 5.11 "*Tag properties*").

The icon of each group can be customized by using the **Properties** command of the associated contextual menu.

The order of the groups in the tree and their overlapping can be customized:

- To modify the order of groups of same level (belonging to the same parent group), click with the mouse left button on the icon of the grouping to move, drag the icon (keeping the mouse button pressed) over the icon of the same level group AFTER which the group is wished to be moved, then release the mouse button. To move a group to the first position, drag its icon over the icon of its parent group.

- To attach a group and its whole sub-tree to a group of different level (but not belonging to its own sub-tree), click with the mouse left button on the icon of the group to move, drag the icon (keeping the mouse button pressed) over the icon of the group in which the group is wished to be incorporated, then release the mouse button.

- To attach a group to a group of same level, first move it immediately after the group to which it is wished to be attached (see above), then drag it over this same group: the moved group (and its whole sub-tree) is positioned on the top of the list of groups attached to the targeted group.

- To extract a group from its parent group, move it to the top of the list of same level group (see above), then drag it over its parent group: the moved group (and its whole sub-tree) is positioned at the level of its parent group, immediately after.

To assign tags to a group, various methods can be used:

- Directly create a new tag in the group by selection of the **Add a tag** command in the contextual menu associated with the branch or the view. A first dialog box is displayed

to enter the tag reference or to browse it in an external application (see § 5.10 "*Selection of an external tag*"). When the reference is defined, a new dialog box allows the parameters of the tag to be configured (see § 5.11 "*Tag properties*"). The default parameters of the created tag (type, event condition, action list …) are those of the tag which was selected in the view.

- Use the **Paste** command in the contextual menu, to create in the group a new DDE tag. Before that operation, the pasted tag has to be copied from a DDE server application ("LINK" format). A dialog box allows the parameters of the tag to be configured (see § 5.11 "*Tag properties*").

- Use the same **Paste** command in the contextual menu, to insert in the group a list of tags that were prior copied in the clipboard (XML format) from the tag view, a data server or another group. The copied tags are just assigned to the group. They are not removed from the tag list or from the origin group.

- Perform a "drag-and-drop" operation: the tags are first selected in the view associated with the ***Tags*** branch, a data server branch or any other group branch, then dragged with the mouse over the icon of the target group. The tags dragged and dropped are just assigned to the group. They are not removed from the tag list. If they are issued from another group, they are automatically detached from this group, except if the CTRL key is keeping pressed at the dropping time (cursor "+" displayed to signal a copy operation).
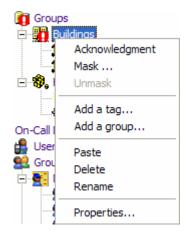
The synoptic view associated with a group displays either the list of its child groups (belonging to the first level of its sub-tree) or the list of the whole tags attached to the group and all the groups belonging to its sub-tree. The choice of the displayed list is done by clicking on the button ⊞▾ of the browsing bar.

The synoptic view associated with a group displays the status and the value of the variables assigned to the group (see above).

The "Tags" selection displays the status and the value of the tags under the same form as in the **Tags** branch (see above). This view can be used as staring base for the assignment of the tags to the others defined groups, by "drag-and-drop" or "copy-paste" operations.

The order of the tags in the list can be modified. To move a tag, click on its line with the mouse left button, drag it, keeping the mouse button pressed, over the tag line AFTER which the dragged tag is wished to be moved, then release the mouse button.

Tree menu

Acknowledgement

	Acknowledgment of all alarms attached to the selected group and to the groups of its sub-tree.
Mask	Masking of all alarms attached to the selected group and to the groups of its sub-tree.
Unmask	Unmasking of all alarms attached to the selected group and to the groups of its sub-tree.
Add a tag	Creation of a new tag attached to the selected group (see § 5.10 "*Selection of an external tag*" and § 5.11 "*Tag properties*").

Add a group	Creation of a new group in the selected group (see § 5.14 "*Tag group properties*").
Paste	Creation in the group of a new tag using a DDE reference that was prior copied in the clipboard ("LINK" format) from a DDE server application or assignment to the group of a list of tags prior copied in the clipboard (XML format) from the tag view, a data server or another group.
Delete	Deletion of the selected group. After confirmation, a message proposes to delete the tags contained in the group.
Rename	Change the name of the group.
Properties	Edition of the group properties (see § 5.14 "*Tag group properties*").
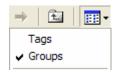
Group view menu

choice

Open	Open the selected group under the form of a list of groups if child groups are defined or a list of tags in the opposite case.
Acknowledgment	
	Acknowledgment of all alarms attached to the selected group and to the groups of its sub-tree.
Mask	Masking of all alarms attached to the selected group and to the groups of its sub-tree.
Unmask	Unmasking of all alarms attached to the selected group and to the groups of its sub-tree.

Delete	Deletion of the selected group. After confirmation, a message proposes to delete the tags contained in the group.
Rename	Change the name of the group.
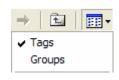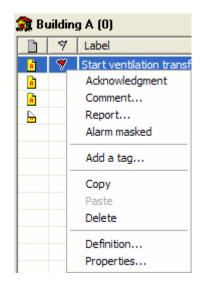
Properties   Edition of the group properties
(see § 5.14 "*Tag group properties*").

Tag view menu   choice

Acknowledgment

         Acknowledgment of selected alarms [9].

Comment   Add a comment about the selected alarms [1][10].

Report   Edit a report about the selected alarms. Consultation of the report when a report already exists for only one of the selected alarms [1][2].

Alarm masked   Masking / Unmasking of selected alarm tags (see § 6.15.1 "*Masking / Unmasking alarms*").

Add a tag   Creation of a new tag attached to the selected group (see § 5.10 "*Selection of an external tag*" and § 5.11 "*Tag properties*").

Copy   Copy the properties of the selected tags to the clipboard (XML format) for later paste in other groups.

Paste   Creation in the group of a new tag using a DDE reference that was prior copied in the clipboard ("LINK" format) from a DDE server application or assignment to the group of a list of tags prior copied in the clipboard (XML format) from the tag view, a data server or another group.

Delete   Deletion of the selected tags. A message proposes the deletion of the tags from the tag list.

Definition   Edition of the external reference of the tag
(see § 5.10 "*Selection of an external tag*").

Properties   Edition of the tag properties
(see § 5.11 "*Tag properties*").

---
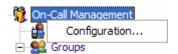
[9] This command is available only for the tags in alarm.
[10] This command is available only when the option **Database export** is validated (see § 7.1 "*General options*").

4.6.1.7   On-call Management

The "**On-Call Management**" branch presents in its sub-tree all the information relative to the on-call management of the parent station, with 2 main branches: a **Users** branch which contains the list of all the users attached to the station and a **Groups** branch which contains the list of the defined on-call groups with their teams.

Tree menu

	Configuration	Configuration of the on-call management (see § 5.3 "*On call groups*").

Associated view menu

	Open	According to the selected icon, open the list of the users or of the on-call groups.
	Configuration	According to the selected icon, configuration of the user list (see § 5.1 "*User list*") or of the on call groups (see § 5.3 "*On call groups*")

4.6.1.8   Users

The **Users** branch displays in its associated synoptic view the whole users assigned to the parent station.

In this view, each user is represented by an icon. The off-duty users are signaled by the overlapped symbol ❌. The duty status of a user or of a group of users can be switched by using the **Off duty** command in the contextual menu.
One or more users can be set off-duty and substituted by using the **Substituted by...** command in the contextual menu to designate a substitute for the selected users in each of their groups.

In the report view, the "Called numbers" column displays the numbers that will be used when the user will be called (in the call order). The comment column provides possible additional indications (substitute name if the user if off duty).

The **User** view can be used for the configuration of the user list by using the **Add a user** command from the contextual menu attached to the branch or the view. A dialog box allows the user parameters to be configured (see § 5.1.1 "*User properties*").

This view also can be used as a starting base when assigning users to the on-call groups and teams:
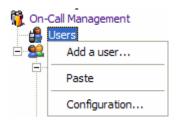
- By "drag-and-drop" operation: users to assign to a group or a team are selected[1] in the view then dragged with the mouse over the tree branch that corresponds to the wanted group or team. This operation does not remove the selected users from the user list, even if the CTRL key is pressed when releasing the mouse button (cursor "+" always displayed during the dragging operation).

---

[1] To select a set of contiguous users, keep the SHIFT key pressed during the selection. To select disjoined sets of users, keep the CTRL key pressed during the selection.

- By "copy / paste" operation: users to assign to a group are selected[1] in the view then copied in the clipboard using a XML format ("Copy" command of the contextual menu). These users can after be pasted in various groups and teams.

The order of the users in the list can be modified. To move a user, click with the mouse left button on its icon or on its line in the list, drag it, keeping the mouse button pressed, over the user line AFTER which the dragged user is wished to be moved, then release the mouse button.

Tree menu

	Add a user	Creation of a new operator (see § 5.1.1 "*User properties*").
	Paste	Add an operator or a group of operators prior copied in the clipboard (XML format) from the user list of the station or another station.
	Configuration	Configuration of the user list (see § 5.1 "*User list*").
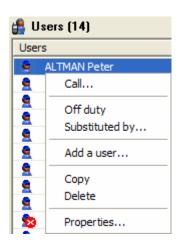
Associated view menu

	Call	Call of the selected operators (see § 6.9 "*Sending a message*").
	Off duty	Switch the selected operators to "Off-duty" / "On-duty".
	Substituted by	Switch the selected operators to "Off-duty" with designation of a substitute (see § 6.8 "*Definition of substitutes*").
	Add a user	Creation of a new operator (see § 5.1.1 "*User properties*").
	Copy	Copy the properties of the selected operators to the clipboard (XML format) for later paste in groups and teams.
Delete		Deletion of the selected operators. After confirmation, the operators are definitively deleted.
Properties		Edition of the properties of the selected operator (see § 5.1.1 "*User properties*").

4.6.1.9   On-call groups

The **Groups** branch displays in its associated view the list of the defined groups.

The groups represented with the icon 🗂 are the groups in which there is no active team (no team scheduled, team changeover not performed or group in derogation state without redirection of the calls). The groups represented with the overlapped symbol ❌ are those in which the active team is not reachable (all operators off duty or with invalid dial numbers).
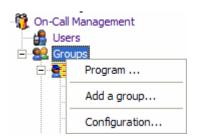
The order of the groups can be customized in the tree and in the report view associated with the **Groups** branch.

To move a group, click on its icon with the mouse left button, drag the icon (keeping the mouse button pressed) over the icon of the group AFTER which the group is wished to be moved, and then release the mouse button. To move a group to the first position, drag its icon over the **Groups** icon.

The list of groups allows some actions to be performed on the selected groups:

- The call of one or several groups simultaneously, meaning the call of the active teams of each of the selected groups.

- The locking of the calls for one or more groups, meaning the forcing to the derogation state of the selected groups, without redirection of the calls to a team.

Tree menu

Program	Configuration of the weekly on-call programs (see § 5.5 “*On call program*”).
Add a group	Creation of a new on-call group (see § 5.3.1 “*On-call group properties*”).
Configuration	Configuration of the group list (see § 5.3 “*On call groups*”).

Associated view menu

Open	Open the list of the teams or of the operators of the selected group.
Call	Call of the active team in every selected group (see § 6.9 “*Sending a message*”).
Call locked	Locking / Unlocking of the calls of the group (see § 6.14 “*Schedule derogation / Call locking*”).
Program	Configuration of the weekly on-call program of the selected group (see § 5.5 “*On call program*”).

Rename	Change the name of the group.
Delete	Deletion of the selected groups. After confirmation, the selected groups and their teams are definitively deleted. The operators assigned to the deleted group are not deleted.

Properties   Edition of the properties of the selected group
                          (see § 5.3.1 *"On-call group properties"*).

The synoptic view associated with each group branch displays either the list of teams of the group or the list of all the operators assigned to the group. The choice of the displayed list is done by clicking on the button ▦▾ of the browsing bar.

To assign users to a group, various methods can be used:

- Directly create a new operator in the group by selection of the **Add a user** command in the contextual menu associated with the **Users** view. A dialog box allows the parameters of the user to be configured (see § 5.1.1 *"User properties"*).

- Use the **Paste** command of the contextual menu, to insert in the group a list of operators who were prior copied in the clipboard (XML format) from the user list, another group or a team. The copied operators are just assigned to the group. They are not removed from the user list or from the origin group or team.

- Perform a "drag-and-drop" operation: the operators are first selected in the view associated with the **Users** branch, or any group or team branch, then dragged with the mouse over the icon of the target group. The operators dragged and dropped are just assigned to the group. They are not removed from the user list. If they are issued from another group or team, they are automatically detached from it, except if the CTRL key is keeping pressed at the dropping time (cursor "+" displayed to signal a copy operation).

When the option **Create a team for each user added to a group** is validated in the dialog box of group configuration (see § 5.3 *"On call groups"*), a team is automatically created each time an operator is added to a group, giving it the name of the added operator. It is also possible to directly create a team in a group by using the **Add a team** command from the contextual menu associated with the group.

The synoptic view which presents the list of the group users displays the duty and relief status of the users in the group:

- The duty status of the operators is signaled by the overlapped symbol ⊗ for the off-duty operators. The duty status of one or more operators can be switched by using the **Off duty** command of the contextual menu.

- The relief status of the operators in the group is signaled by the overlapped symbol **2** on the icon of the relief operators. The relief status of one or more operators can be switched by using the **Relief user** command of the contextual menu.
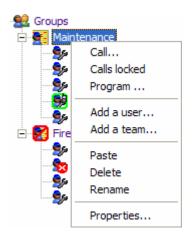
One or more operators can be set off-duty and substituted by using the **Substituted by…** command in the contextual menu to designate a substitute in the group for the selected users.

The list of the numbers to call for each operator is displayed in the in the report view of the operators of the group.

This view can be used as starting base for the assignment of the operators to the other defined groups or teams of the group, by "drag-and-drop" or "copy-paste" operations.

The order of the operators in the group can be modified. To move an operator, click with the mouse left button on its icon or on its line in the list, drag it, keeping the mouse button pressed, over the operator line AFTER which the dragged operator is wished to be moved, then release the mouse button.

Tree menu

Call	Call of the active team of the group (see § 6.9 "*Sending a message*").
Call locked	Locking / Unlocking of the calls of the group (see § 6.14 "*Schedule derogation / Call locking*").
Program	Configuration of the weekly on-call program of the group (see § 5.5 "*On call program*").
Add a user	Creation of a new operator assigned to the group (see § 5.1.1 "*User properties*").
Add a team	Creation of a new team in the group (see § 5.4.1 "*Team properties*").
Paste	Assignment to the group of a list of operators prior copied in the clipboard (XML format) from the user list, another group or a team.
Delete	Deletion of the group. After confirmation, the group and its teams are definitively deleted. The operators assigned to the group are not deleted.
Rename	Change the name of the group.
Properties	Edition of the properties of the group (see § 5.3.1 "*On-call group properties*").
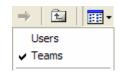
Team view menu

choice

Open	Open the list of the operators of the selected team.
Call	Call of the active (not relief) operators of the selected teams (see § 6.9 "*Sending a message*").
On-call (forced)	Begin / End of the redirection of calls (derogation) to the forced team (see § 6.14 "*Schedule derogation / Call locking*").
Team changeover	Start of on-call time (clock in). The name of the operator performing the team changeover is asked for confirmation (see § 6.13 "*Team changeover*"). This command is only proposed for the teams that are scheduled on the next period.
End on-call	End of the on-call period (only for active team). The name of the operator declaring the end of the on-call time (clock out) is asked for confirmation (see § 6.13 "*Team changeover*").
Delete	Deletion of the selected teams. After confirmation, the selected teams are definitively deleted. The operators assigned to the deleted teams are not deleted.
Rename	Change the name of the team.
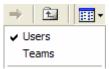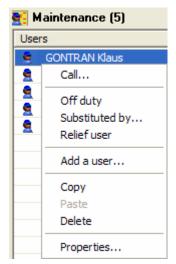
Properties	Edition of the properties of the team (see § 5.4.1 "*Team properties*").

User view menu   choice

	Call	Call of the selected operators (see § 6.9 "*Sending a message*").
	Off duty	Switch the selected operators to "Off-duty" / "On-duty".
	Substituted by	Switch the selected operators to "Off-duty" with designation of a substitute for the group (see § 6.8 "*Definition of substitutes*").
	Relief user	Switch the selected operators to the "Relief" / "Active" status in the group.
	Add a user	Creation of a new operator assigned to the group (see § 5.1.1 "*User properties*").

Copy	Copy the properties of the selected operators to the clipboard (XML format) for later paste in groups and teams.
Paste	Assignment to the group of a list of operators prior copied in the clipboard (XML format) from the user list, another group or a team.
Delete	Deletion of the selected operators. The operators are only removed from the group. They remain defined in the user list.
Properties	Edition of the properties of the selected operator (see § 5.1.1 "*User properties*").

4.6.1.10   Teams

Each **team** branch displays in its associated view the ordered list of the users of team.

The team represented with the icon 🔲 is the active team of the parent group (team called in case of alarm concerning the group). The teams represented with the overlapped symbol ❌ are those that are not reachable (all operators off duty or no valid dial numbers defined).

The order of the teams in a group can be customized in the tree. To move a team, click on its icon with the mouse left button, drag the icon (keeping the mouse button pressed) over the icon of the team AFTER which the team is wished to be moved, and then release the mouse button. To move a team to the first position in the group, drag its icon over the icon of its parent group.

To assign users to a team, various methods can be used:

- Directly create a new operator in the team by selection of the **Add a user** command in the contextual menu associated with the "User" view. A dialog box allows the parameters of the user to be configured (see § 5.1.1 "*User properties*").

- Use the **Paste** command of the contextual menu, to insert in the team a list of operators who were prior copied in the clipboard (XML format) from the user list, a group or another team. The copied operators are just assigned to the team. They are not removed from the user list, nor from the origin group or team.

- Perform a "drag-and-drop" operation: the operators are first selected in the view associated with the **Users** branch, or any group or team branch, then dragged with the mouse over the icon of the target team. The operators dragged and dropped are just assigned to the team. They are not removed from the user list. If they are issued from another group or team, they are automatically detached from it, except if the CTRL key is keeping pressed at the dropping time (cursor "+" displayed to signal a copy operation).

The operators added to a team are automatically added to the parent group.

The following actions can be performed on the team selected in the tree:

- Call of the team, resulting in the automatic selection of the active (not relief) operators of the team for a message transmission.

- Perform a team changeover to signal that the team that was scheduled begins it on-call period. After declaration of the operator who clock in, the team becomes active (icon ![icon]).

- End of on-call period (only for the scheduled active team), meaning that the team as ended its on-call time. After identification of the operator who clock out, the team becomes inactive (icon ![icon]).

- Forcing of the active team, corresponding to a derogation of the group with redirection of the calls to the forced team, without time limitation (see § 6.14 "*Schedule derogation / Call locking*"). The forced team becomes active (icon ![icon]), the possible old active team being automatically deactivated. The same command on a forced team (command **On-call (forced)** checked in the contextual menu) ends the forcing.

Tree menu

Call	Call of the active (not relief) operators of the team (see § 6.9 "*Sending a message*").
On-call (forced)	Begin / End of the redirection of calls (derogation) to the forced team (see § 6.14 "*Schedule derogation / Call locking*").
Team changeover	Start of on-call time (clock in). The name of the operator performing the team changeover is asked for confirmation (see § 6.13 "*Team changeover*"). This command is only proposed for the teams that are scheduled on the next period.
End on-call	End of the on-call period (only for active team). The name of the operator declaring the end of the on-call time (clock out) is asked for confirmation (see § 6.13 "*Team changeover*").
Add a user	Creation of a new operator assigned to the team (see § 5.1.1 "*User properties*"). The created operator is automatically added to the parent group.
Paste	Assignment to the team of the operators prior copied in the clipboard (XML format) from the user list, a group or another team.

|	
Delete	Deletion of the selected teams. After confirmation, the teams are definitively deleted. The operators of the teams are not deleted.
Rename	Change the name of the team.
Properties	Edition of the team properties (see § 5.4.1 *"Team properties"*).

The synoptic view of the team displays the duty and relief status of the operators in the team:

- The duty status of the operators is signaled by the overlapped symbol ⊗ for the off-duty operators. The duty status of one or more operators can be switched by using the **Off duty** command of the contextual menu.

- The relief status of the operators in the team is signaled by the overlapped symbol **2** on the icon of the relief operators. The relief status of one or more operators can be switched by using the **Relief user** command of the contextual menu.

One or more operators can be set off-duty and substituted by using the **Substituted by...** command in the contextual menu to designate a substitute in the parent group of the team for the selected operators.

The list of the numbers to call for each operator is displayed in the in the report view of the operators of the team.

This view can be used as starting base for the assignment of the operators to the other teams of the group or other groups, by "drag-and-drop" or "copy-paste" operations.

The order of the operators in the team can be modified. To move an operator, click with the mouse left button on its icon or on its line in the list, drag it, keeping the mouse button pressed, over the user line AFTER which the dragged operators is wished to be moved, then release the mouse button.

Associated view menu

	Call	Call of the selected operators (see § 6.9 *"Sending a message"*).
	Off duty	Switch the selected operators to "Off-duty" / "On-duty".
	Substituted by	Switch the selected operators to "Off-duty" with designation of a substitute for the parent group of the team (see § 6.8 *"Definition of substitutes"*).
	Relief user	Switch the selected operators to the "Relief" / "Active" status in the team.
	Add a user	Creation of a new operator assigned to the team (see § 5.1.1 *"User properties"*). The created operator is automatically added to the parent group.
Copy	Copy the properties of the selected operators to the clipboard (XML format) for later paste in groups and teams.	
Paste	Assignment to the team of the operators prior copied in the clipboard (XML format) from the user list, a group or another team. The assigned operators are automatically added to the parent group.	

Delete Deletion of the selected operators. The operators are only removed from the team. They remain defined in the user list and assigned to the parent group.

Properties Edition of the properties of the selected operator (see § 5.1.1 *"User properties"*).

4.7   Browsing bar

The browsing bar, located above the synoptic view of the topographical screen, allows the customization of the display and a quick browsing through the various views.
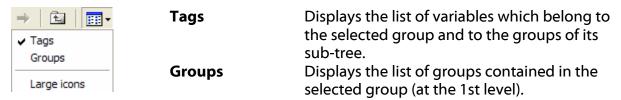
This bar contains the following buttons:

Button	Action
	Display / Hide the tree window on the left of the screen.
	Display / Hide the tabbed application window.
	Return to the previous views (go back).
	Return on the return to the previous views (go forward).
	Go to the upper level in the tree.
	Display selection for the synoptic view, according to the selected view in the tree.
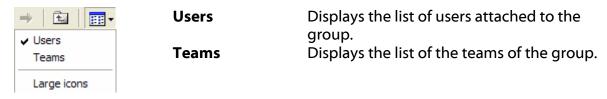
For all views

Large icons	Selection of a synoptic view as a map of icons format 32x32 pixels.	
Small icons	Selection of a synoptic view as a map of icons format 16x16 pixels.	
List view	Selection of a synoptic view as a list of icons format 16x16 pixels.	
Report view	Selection of a synoptic view as an item list on several columns.	

For "tag group" views

Tags	Displays the list of variables which belong to the selected group and to the groups of its sub-tree.
Groups	Displays the list of groups contained in the selected group (at the 1st level).

For "on-call group" views

Users	Displays the list of users attached to the group.
Teams	Displays the list of the teams of the group.
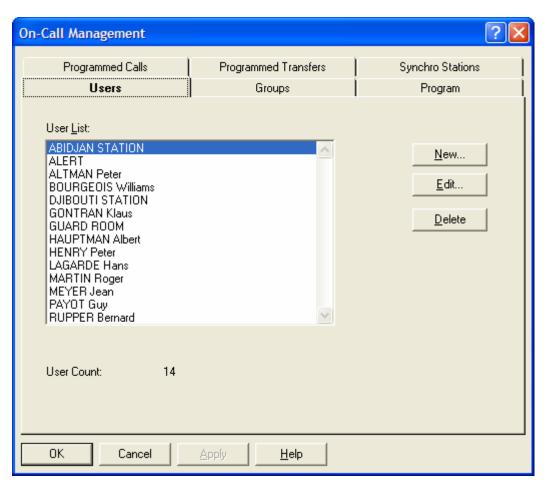
5 CONFIGURATION

5.1 User list

To define the list of operators who will be called to intervene on the Alert system (locally or at a distance), select the "**On call management...**" command in the "**Configuration**" menu, or click on the button 🖨, then on the displayed tabbed dialog box, click on the "**Users**" tab.

The dialog box of operator configuration also can be called from the contextual menu associated with the "**Users**" branch in the tree of the main screen (see § 4.6.1.8 "*Users*").

This dialog box displays the list of operators and the total number of declared operators. The name of the station (if it is not the local station) with which the operator is associated is displayed in brackets.
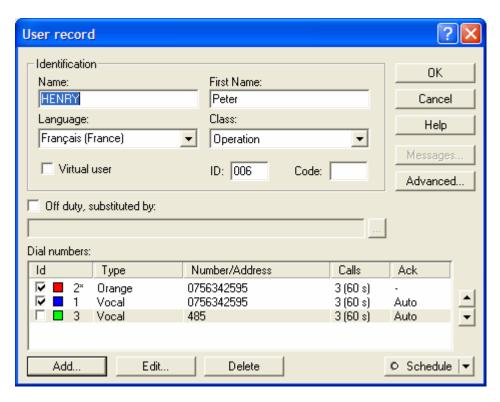
If the operator belongs to a class for which the configuration of operators is allowed (only the class "System" by default), he will be able to perform the following operations:

- **Create a new operator** by clicking on the "**New...**" button. This choice lead to the edition of a new user record (see below).
- **Modify the record of an existing operator**, by selecting the operator in the list then by clicking on the "**Edit...**" button (or directly by double-clicking the operator in the list). This choice leads to the edition of the operator's record selected (see below).
- **Remove an operator of the list**, by selecting it in the list then clicking on the "**Delete**" button. A message box asks for a confirmation of the command.

5.1.1   User properties

The "User record" dialog box defines the properties of an operator. This dialog box is called from the dialog box of operator configuration.

It also can be called from the contextual menu associated with the branch "**Users**" in the tree of the main screen (see § 4.6.1.8 "*Users*").

At the creation time of a new record, a numerical operator code from 1 to 4 digits is automatically assigned to him. The length of the user code depends on the value defined in the vocal server options (see § 7.7.1 "*Vocal Server options*"). This code is used to identify the correspondent in vocal communications. It can be modified under condition to be unique in the user database.

The configurable user properties are:

Identification

- **Name**

User name (1 to 20 characters). This field can only be modified by an authorized user (user configuration authorized in the profile, access level higher or equal).

- **First Name**

User first name (optional, 0 to 20 characters). This field can only be modified by an authorized user (user configuration authorized in the profile, access level higher or equal).

- **Language**

Usual language of the operator. Messages addressed to the user will be transmitted in this language when the message does exist in the language in question.

If the message to transmit is not defined in the user language, it will be searched in the following order:

➢ in the user interface language, if it is defined in this language,

➢ in US English, if it is defined in this language,

➢ in the first available language for the message.

- **Class**

Class assigned to the operator. A class defines operator's profile by assigning to all operators of the same class a specific work space: customized menu and toolbar, displayable screens, authorized commands (see § 5.2 *"User profiles"*).

The class of the first defined operator ("ALERT" by default) cannot be modified. This operator must always belong to the basic system class.

- **Virtual *user***

A **virtual** operator represents a communication media that can be affected to different operators: pager or cellular telephone used by several operators, fax, etc.

When a virtual operator is called in vocal mode, any real operator belonging to one of the on-call groups of the called virtual operator can identify himself in place of the virtual operator. In the same way, when the virtual operator is a message receiver (SMS …), the real operator having received the message can call back by telephone to acknowledge the call. This functionality allows the identification of the **real** operator that acknowledged the call sent to an anonymous pager or telephone.

- ***ID***

User ID code (1 to 4 digits) used to identify the correspondent during a voice communication. This code is automatically assigned at the time of the user creation. It can be changed later (by the user himself or another having the required rights), under condition to be unique in the user database (if the new code already exists, it is denied).

- **Code**

Secret access code (password) of the user: optional, 0 to 4 digits. This code is used to authenticate the user during a local or remote access.

Off duty, substituted by

When a user is "off-duty", he is never called when an alarm concerning one of his groups is going active, even though he belongs to a team that is active at this time.

This option can be used for a user temporarily absent, without to have to modify the schedule table.

When a user is "off-duty", a **substitute** can be designated for each of his groups by clicking on the button ⬚ on the right of the substitute display field. See § 6.8 *"Definition of substitutes"*.

Every time a user is set "off-duty", with or without substitute, it is recorded in the event log.

Dial numbers

List of the available numbers that can be used to reach the operator.

➢ Column **Id**   Number identifier associated with a color. The **check box** validates or not the number in the call sequence. A stared Id (*) indicates that the number is not a final number and that consequently the call must continue using the following number.

➢ Column **Type**   Type of the media to use (communication driver).

➢ Column **Number**   Number or address of the operator in accordance with the selected media.

➢ Column **Calls**   Number of tries in case of unsuccessful call of the number, time between each try (in brackets, in seconds).

➢ Column **Ack**   Number of tries in case of no call acknowledgement, time waited for receiving the call acknowledgment (in brackets, in minutes), or "**Auto**" if the call is automatically acknowledged, or "**-**" if call acknowledgment is not required (no final number).

The numbers are called sequentially following the order defined in the list, ignoring the unchecked numbers. The following number will be called only in case of unsuccessful call of the current number, after the defined number of tries, or immediately after if the current number is not a final number (stared Id, "**-**" in the Ack column).

The call sequence ends when a final number is successfully called.

To add a dial number to the list, click on the **Add...** button (see § 5.1.2 "*Dial number definition*").

To modify a dial number, select it in the list then click on the **Edit...** button (see § 5.1.2 "*Dial number definition*").

To delete a dial number, select it in the list then click on the **Delete** button.

Use the buttons ▲ and ▼ on the right of the list to modify the order of the numbers in the list.

Button _Schedule_

Click on this button to display or mask the dial number schedule of the operator.
When the schedule is active, a green led is displayed on the button.
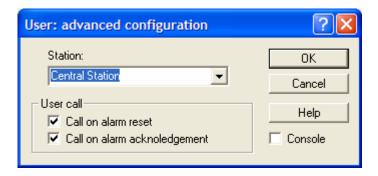
Button _Messages...._

Click on this button to consult the messages destined to the user. It is only validated when the list of messages is not empty.

Button _Advanced..._

Click on this button to have access to the advanced parameters of the user:

- **Station**

Selection of the station to which the operator is normally attached. This information is used only as discriminator to offer the possibility of the same operators name and first name on different sites.

By default, the name of the local station is proposed.
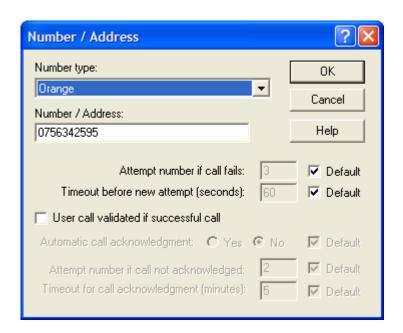
- **User call**

  ➤ **Call on alarm reset**. If the call on event reset is validated, the user will be called for all resets of events for which the call on reset was validated.

  ➤ **Call on alarm acknowledgment**. If the call on alarm acknowledgment is validated, the user will be called for all acknowledgments of alarms for which the call on acknowledgment was validated.

- **Console**

This option, when checked, defines the operator is designated as "console" operator.

The operators designated as "console" receive the messages transmitted by client applications via the DDE command "SendConsole" or the API function "AlertSendConsole".

5.1.2 Dial number definition

- **Number type**

Selection of the media to use to call the user. The list of proposed media in the dropdown list depends on the installed drivers.

To add a media to the list, open the dialog box of communication configuration, select the **Driver** tab then click on the **Add** button (see § 5.19 "*Communication drivers*").

- **Number / Address**

Depending on the selected media: telephone dial number (beeper call, voice call, Alert modem) or address (pager, email, Alert socket …).

A telephone dial number can contain from 1 to 24 alphanumeric characters (modem codes for pause or tone waiting accepted).

An internal number and an external number can be defined in the same field with the character '/' between the both numbers (e.g.: 93/0476041093). At the time of the call, the number to dial will be automatically selected according to the used telephone line (internal or external).

For a pager address, its length and allowed characters depend on the selected media. Consult the on line help specific to each installed drivers for more information.

When the "Email" media is selected, this field contains the email address of the receiver. If the final receiver is a pager or a mobile-phone (SMS sent by email), the email address will have to be preceded by one of the following strings:

➢ "\\" if the information that designates the end-receiver is contained in the email address,

➢ "<mobile number>" if the end-receiver has to be designated in the email subject, with <mobile number> designating the mobile address (or pager address) such as it has to be specified in the email subject.

When the "Command" driver is selected, the address field designates the command to transmit. This command can be directly selected by clicking on the button ⊡, on the right of the address edit field.

When the "Alert Socket" media is selected, this field contains the IP address of the remote station, followed by a comma and the number of the used IP port: example "192.168.0.15,20".

- **Attempt number if call fails**

Maximum number of call attempts to the number when the call failed (no answer, busy, ...). This number can be between 1 and 9.

If the *Default* option is checked, the value selected (indicated in grayed in the field) is that which was defined at the level of the communication driver (when this last proposes a value) or at the level of the general call options (see § 7.5 "*Call options*").

The time waited to try a new call depends on the type of failure. In case of no answer or busy failure, this time is that indicated by the parameter below ("timeout before new attempt"). It is reduced to 1 second if the modem does not detect the dial tone.

- **Timeout before new attempt**

Time delay waited after a call failure (no answer or busy) to try a new attempt, in seconds.

If the *Default* option is checked, the value selected (indicated in grayed in the field) is that which was defined in the general call options (see § 7.5 "*Call options*").

- **User call validated on successful call**

This option, validated by default, indicates that when the call of this number succeeds, the call of the operator is validated and that consequently the following numbers of the call sequence will not be called (relief numbers). If this option is not validated, the call of the number is considered as simply informative and does not require a call acknowledgment (SMS transmission followed by a vocal call of the operator for example). For the vocal calls, this option is always validated and is not modifiable (grayed option).

- **Automatic call acknowledgment**

This option indicates, when it is validated, that the call of the operator will be automatically acknowledged when it succeeds and will thus not require a later call back for acknowledgment.

If the *Default* option is checked, the option value selected (indicated in grayed by the radio buttons *Yes* and *No*) is that which was defined in the general alarm options (see § 7.4 "*Alarm options*").

For the vocal calls, this option is always validated and is not modifiable (grayed option).

- **Attempt number if call not acknowledged**

Maximum number of calls of the number when the call succeeded but the operator did not acknowledge the call within the defined delay. This number can be between 1 and 9.
The call can be acknowledged locally or remote by telephone, by SMS or from a client station.

If the *Default* option is checked, the value selected (indicated in grayed in the field) is that which was defined in the general call options (see § 7.5 "*Call options*").

For the vocal calls, this option is always validated and is not modifiable (grayed option).

- **Timeout for call acknowledgment**
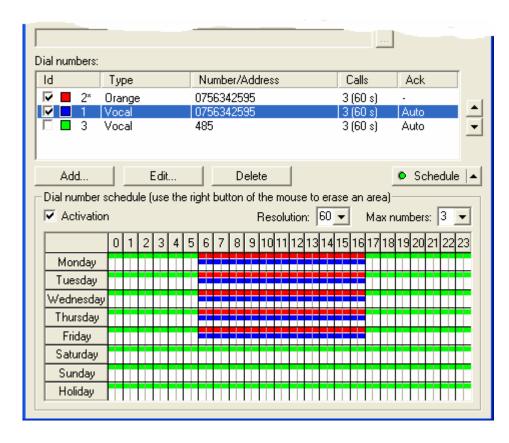
Time delay waited for call acknowledgment when the called operator has been reached, but without certainty (SMS, beeper, pager). This delay can be between 0 and 99 minutes, the value 0 canceling any delay (the call then always is considered as acknowledged).

If the *Default* option is checked, the value selected (indicated in grayed in the field) is that which was defined in the general call options (see § 7.5 "*Call options*").

This parameter is not significant if the automatic call acknowledgment option is selected (grayed fields).

5.1.3   Dial number schedule

On the user dialog box, click on the "**Schedule**" button to display the defined schedule of call numbers.

This schedule defines under a graphical form the weekly assignment of the dial number to use to reach the operator.

The dial numbers programmed for every day of the week are represented as a line drawn with the color of the number. On a same daily period, several numbers can be stacked, defining a sequence of numbers to call following the displayed order of the stack (from top to bottom). Of course, the call sequence will end after the first successful call of a final number.

To put a number in the schedule, select it in the number list, then draw with the mouse on the weekly schedule the rectangle area corresponding to the wished period (on one or several day ranges).

Note: holidays are defined in the general on-call schedule by clicking on the first column of the row corresponding to the wished day.

- **Activation**

Select this option to activate the displayed dial number schedule. This option is automatically selected as soon the schedule is modified.
Uncheck this option to disable the schedule.

- **Resolution**

This dropdown list defines the schedule resolution in minutes (minimum time slot).
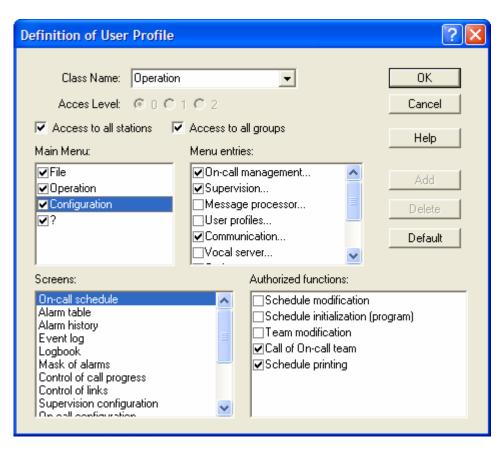
- **Max numbers**

This dropdown list defines the maximum size of the number sequence displayable in the schedule (number of stackable lines by day row).

5.2   User profiles

To define and configure usable user profiles, select the "**User profiles...**" command in the "**Configuration**" menu.

In initial configuration, this command is only accessible for operators of "System" class (Level 2).

- **Class Name**

By default, 3 basic classes are defined, each associated with an access level.

➢ **Operation** (level 0): the operator has access only to operation of the application (no configuration). He cannot close the application.

➢ **Control** (level 1): the operator has access to the configuration of exploitation (alarms, on-call schedule,...), but he can't configure the user file nor parameter the basic environment (options, vocal server, ports, drivers,...).

➢ **System** (level 2): maximal level, access to all functions of the application.

The class "**(without user)**" corresponds to the configuration of the application when there is no logged operator. It authorizes or not the visualization of certain operating screens. In this configuration, no command is authorized, nor can be authorized.

- **Access Level**

The **access level** associated with a user profile allows to assure compatibility with the old versions, by associating automatically with the defined level the corresponding basic class. It also allows to keep a permanent link between an operator and a basic class in the case where the defined class for the operator would be deleted. It can finally be used by the

external applications to globally determine the rights of an operator (terminal server for example). The access level of a class is not modifiable for the 3 basic classes.

- **Option** *Access to all stations*

When this option is checked (state by default), the user attached to the defined class has access to the data of all stations (schedule, alarm table, alarm history ...).

When this option is not checked, the user has only access to its station, excepted if he is declared as attached to all stations (see advanced parameters of the user properties).

- **Option** *Access to all groups*

When this option is checked (state by default), the user attached to the defined class has access to all the on-call groups, even those to which he does not belong (schedule, alarm table, alarm history ...).

If this option is not checked, the user has only access to the on-call groups to which he does belong.

- **Main Menu**

Selection of authorized commands of the main menu that will be displayed for an operator having the selected profile.

Validate or invalidate a menu by clicking on the corresponding checkbox.

To select the authorized commands for a particular menu, click on the line of the menu in question: commands of the menu selected are presented in the "Menu entries" list.

Remarks:
The "File" menu cannot be disabled ("Login/Logout" command is mandatory).
The "Configuration" menu cannot be suppress for the basic class of level 2 ("System" by default).

- **Menu entries**

Selection of authorized commands in the menu selected into the "Main Menu" list.
Validate or invalidate a menu by clicking on the corresponding checkbox.

Remarks:
The "Login" and "Logout" commands of the "File" menu are not displayed, in the measure where they cannot be disabled.
The "User profiles..." command of the "Configuration" menu cannot be disabled for the basic class of level 2 ("System").

- **Screens**

This list displays the different screens that can be customized.

To select the authorized commands in a particular screen, click on the line of the screen in question: the possible commands for this screen are presented in the **Authorized functions** list.

- **Authorized functions**

This list defines the display options and the authorized functions on the screen selected in the **Screens** list. To Validate or invalidate a function, click on the corresponding checkbox.

This list is disabled for the definition of the profile "without user" (no authorized command).

- **Button *Default***

Click on this button to reinitialize the selected profile with the default configuration associated with its access level.

- **Modification of the profile name**

To modify the name of the selected profile, directly type its new name in the **Class Name** field, then validate by clicking on the **OK** button.

- **Creation of a new profile**
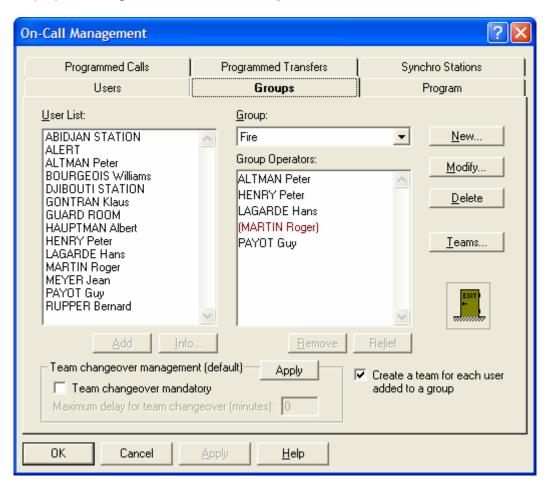
To create a new profile, select the profile to be derived, enter a new name then click on the **Add** button.

- **Deletion of a profile**

To delete a profile, select the profile in question then click on the **Delete** button

5.3   On call groups

To define and configure the on call groups and teams, select the "**On call management…**" command in the "**Configuration**" menu, or click on the button [icon]. This dialog box also can be called from the contextual menu associated with the "**On-call Management**" in branch the tree of the main screen (see § 4.6.1.9 "*On-call groups*").

On the displayed dialog box, select the "**Groups**" tab.

This dialog box displays the list of operators attached to the group selected in the "Group" drop down list.

Group

Name of the selected group. If the group is attached to a station different from the local station, the name of this station is displayed in brackets.

Click on the arrow of the drop-down list to select another group in the list of the existing groups.

User List

List of all the definite operators (user file).

To add an operator to the current group, you can:

➢ either select its name in the list then click the **Add** button.

➢   or click on its name in the list then drag it into the list of the operators of the group by keeping the mouse button pressed (release the button on the destination).

A click on the button **Information...** or a double click in this list causes the form of the operator selected in the list to be displayed.

Group Operators

List of operators belonging to the selected group.

The operators in brackets are the relief operators [11] of the group.

To set an operator as relief operator (or set him back as main operator), you can:

➢ either select his name in the list then click on the **Relief** button,

➢ or double-click on this operator in the list.

To remove an operator of this list, you can:

➢ either select its name in the list then to click the **Remove** button,

➢ or click on his name in the list then drag it to the "exit" icon by keeping the mouse button pressed (release the button on the destination).

Button *New...*

Click on this button to create a new group. A dialog box is displayed for the configuration of the properties of the new group (see § 5.3.1 "*On-call group properties*").

Button *Modify...*

Click on this button to open the property dialog box of the selected group (see § 5.3.1 "*On-call group properties*").

Button *Delete*

This button allows the current group to be deleted.
A message asking for confirmation is displayed when this choice is performed.

Button *Teams...*

This button gives access to the configuration of the teams of the group (see § 5.4 "*On call teams*").

Team changeover management

- **Team changeover mandatory**

    This option defines the default management mode of the team changeover. It predefines the team changeover mode for each new created group. It does not modify the team changeover mode for the existing groups, except when clicking on the **Apply** button.

    When this option is checked, the on-call users have to clock in and out (see § 6.13 "*Team changeover*"). One of the users of the new on-call team has to clock in at the scheduled changeover time within a configurable deadline. If the team changeover has not been performed when the deadline is reached, a team changeover fault is signaled with possibility of trigging an alarm. Similarly at the end of the on-call period, if no other team is planned, one of the users of the on-call team has to clock out. Failing which the team will remain on-call beyond the planned period.

---

[11] A **relief operator** is called on alarm only when no one of main operators has been joined, or (in option) at least one of the main operators has not been joined.

- **Maximum delay for team changeover**

  This option defines the default value of the maximum accepted delay to clock in from the planned beginning time of the on-call period. This option predefines the default delay for each new created group. It does not modify the default delay for the existing groups, except when clicking on the **Apply** button.

  When clocking in, this delay is proposed by default for waiting the next team changeover. The proposed time can be modified.

- **Button *Apply***

  Click on this button to reinitialize the team changeover options (team changeover mandatory and maximum authorized delay) for all the existing groups with the values defined in this dialog box. A message is displayed for confirmation.

Option Create *a team for each user added to a group*

This option validates the automatic creation of a new team every time an operator is added to a group.

At beginning, the created team contains only one operator, the operator added to the group, and is designated by the name of this operator.

This option avoids the team configuration when the on-call organization does not require several operators to be called at a time.
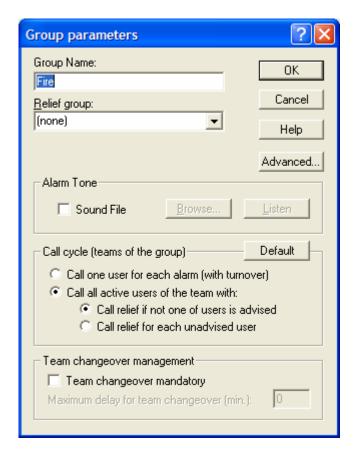
This option, validated by default, is general and concerns all groups.

5.3.1 On-call group properties

This dialog box defines the properties of an on-call group.

It can be called by clicking on the "**New...**" button or on the "**Modify...**" button of the dialog box of on-call group configuration (see above).

It also can be calledfrom the main screen by selecting the **Properties** or **Add a group** entry in the contextual menu associated with the displayed list (group list) or with the branch selected in the "**On-Call Management**" sub-tree of the main screen (see § 4.6.1.9 "*On-call groups*").

The following properties can be configured:

<u>Group name</u>

The group name must be defined: 1 to 20 alphanumeric characters.

<u>Relief group</u>

A group can be designated as relief group. The group selected as relief group will be only called when there is no planned team to call in the schedule of the main group or when the call cycle of the main group failed. If the choice "(none)" is selected, there is no group designated as relief for the actual group.

<u>Alarm tone</u>

- **Sound File**

  When this option is checked, every alarm detected concerning the group will be signaled on the local station by an alarm sound.

- **Button *Browse...***

  Click on this button to browse files for a sound file containing an alarm sound to assign to the group.

- **Button *Listen***

  Click on this button to listen to the alarm sound selected for the group.

Call cycle

This group defines the default options for the management of the teams of the group:

- Selection of the team management mode:
  - ➢ **Call one user for each alarm**, different for every alarm (operator turnover)
  - ➢ **Call all active users of the team** (call broadcasting), with management of relief operators according to options below.

- Definition of the call conditions for relief operators (only for call broadcasting):
  - ➢ **Call relief if not one of user is advised**: a relief operator is called when none of the main operators of the team has been successfully reached (assures that at less one operator is warned).
  - ➢ **Call relief for each unadvised user**: a relief operator is called every time a team's operator cannot be reached (assures that a constant number of operators are warned).

- **Button *Default***

  This button reinitializes the management options for the teams of the group from the default options defined in the general call options.

Team changeover management

- **Team changeover mandatory**

  This option defines the default management mode of the team changeover.
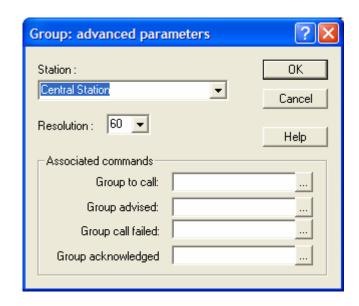
  When this option is checked, the on-call users off the group have to clock in and out. One of the users of the new on-call team has to clock in at the scheduled changeover time within a configurable deadline. If the team changeover has not been performed when the deadline is reached, a team changeover fault is signaled with possibility of trigging an alarm. Similarly at the end of the on-call period, if no other team is planned, one of the users of the on-call team has to clock out. Failing which the team will remain on-call beyond the planned period.

- **Maximum delay for team changeover**

  This option defines for the group the default value of the maximum accepted delay to clock in from the planned beginning time of the on-call period. When clocking in, this delay is proposed by default for waiting the next team changeover. The proposed time can still be modified at this time.

Button Advanced...

This button gives access to the advanced parameters of the group.

Station

This drop-down list selects the station to which the group is attached.
This information is only used to discriminate groups with same name on different sites. By default, the name of the local station is proposed.

Resolution

Display resolution for the group schedule (minimum time slots).

Associated commands

This option group defines the commands that can been transmitted to an external application when the group changes of state:
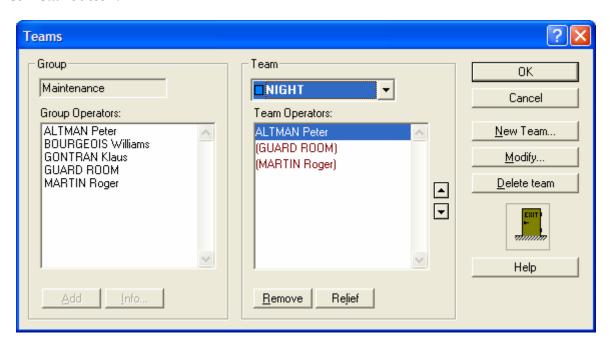
- **Group to call**: command to transmit when the group goes to call state (at least one not acknowledged alarm).
- **Group advised**: command to transmit when the group is considered as warned (successful call).
- **Group call failed**: command to transmit when the call of the group is considered as failed.
- **Group acknowledged**: command to transmit when all the alarms attached to the group have been acknowledged (the group is not any more to call).

Type the command in the edit field or click on the button to select an existing command or to define a new command (see § 8.7 "Command driver").

5.4 On call teams

This dialog box shows the list of operators attached to the team selected in the **Team** drop down list, for the group designated in the field **Group**.

It is called from the **configuration of on call groups** (see above), by clicking on the "**Teams...**" button.

<u>Group</u>

Name of the group to which the team is attached (group selected).

<u>Group Operators</u>

User list of the group to which the team is attached.

To add a user to the current team, you can:

> ➢ select his name in the list then click on the button **Add**,
> ➢ click on his name in the list then drag it into the list of the team operators by keeping the mouse button pressed (release the button on the destination).

A click on the **Info...** button or a double click in the list displays the form of the user selected in the list.

<u>Team</u>

Name of the selected team.

Click on the arrow of the drop-down list to select another team in the list of the teams attached to the current group.

<u>Team Operators</u>

List of the operators belonging to the current team.

The marked in brackets operators are the <u>relief operators</u>.

To **change an operator to relief** (or the opposite), you can:

> ➢ either select his name in the list then click on the button **Relief**,

> or double-click on this operator in the list.

To **modify the team's order** (order of call), you can:

> either select an operator in the list then click on one of the buttons ▲ or ▼,
> or click on an operator in the list then drag it to the wanted position.

To **remove an operator** from this list, you can:
> either select his name in the list then click on the **Remove** button,
> or click on his name in the list then drag him to the "exit" icon by keeping the mouse button pressed (release the button on the destination)

Button *New team...*

Click on this button to create a new team. A dialog box is displayed to define the properties of the new team (see § 5.4.1 *"Team properties"*).

Button *Modify...*

Click on this button to edit the parameters of the team. A dialog box is displayed to edit and modify the properties of the team (see§ 5.4.1 *"Team properties"*).

Button *Delete team*

Click on this button to delete the current team.
A message asking for confirmation is displayed before deleting the team.

5.4.1   Team properties

This dialog box defines the properties of an on-call team.

It can be called by clicking on the **New Team...** button or on the **Modify...** button of the configuration dialog box of the on-call teams (see above).

It also can be called from the main screen by selecting the **Properties** or **Add a team** entry of the contextual menu associated with the displayed list (list of teams of a group) or with the branch selected in the tree (branch <group name> or <team name>). See § 4.6.1.10 "Teams".

One also can have access to this dialog box from the **schedule screen** by double-clicking on the desired team in the team list.

Team Name

The name of the team can be explicitly defined by a name from 1 to 20 alphanumeric characters.

By default, when the option ***First operator name*** is checked, the name of the team is the name of the operator placed at the head of the list of the operators of the team.

Color

Displays the color selected for the team. This color allows the team to be visually identified in the schedules.

When clicking on the **Choose...** button, a color palette is displayed to select a new color for the team.

Call cycle

- Selection of the team management mode:
  - ➢ **Call one user for each alarm**, different for every alarm (operator turnover)
  - ➢ **Call all active users of the team** (call broadcasting), with management of relief operators according to options below.

- Definition of the call conditions for relief operators (only for call broadcasting):
  - ➢ **Call relief if not one of user is advised**: a relief operator is called when none of the main operators of the team has been successfully reached (assures that at less one operator is warned).
  - ➢ **Call relief for each unadvised user**: A relief operator is called every time a team's operator cannot be reached (assures that a constant number of operators are warned).

Button D*efault*

This button reinitializes the team management options from the default options defined at the group level.

5.5 On call program

To configure the weekly on call program of each defined group, select the "**On call management...**" command in the "**Configuration**" menu, or click on the button 🖨️. On the displayed dialog box, select the "**Program**" tab.

This dialog box also can be directly called from the contextual menu displayed when clicking with the mouse right button on the icon of an on-call group in the tree of the main screen then selecting the command "**Program**" (see § 4.6.1.9 "*On-call groups*").

This dialog box displays the weekly on call program defined for the group selected in the "**Group**" drop down list.

Group

Select in this drop-down list the on-call group which one wants to visualize and configure. The selection of a group validates the modifications which were possibly made on the group selected beforehand.

Teams

List of teams attached to the group selected in the drop-down list **Group**. Each team is represented by its color and its name.

To assign a team to the on call program of the group, select it in this list, then, using the mouse, trace on the weekly schedule the rectangular area corresponding to the wished on call period (over one or more days). The corresponding rectangle is filled with the color of the team.

Option *Reduced duty*

When this option is checked, the periods traced on schedule are qualified as on call period in **reduced duty** (call only for priority alarms).

These periods are traced on the **low part** of the day rows.

Resolution

Resolution of the displayed schedule, in minutes (minimum time slots).

Schedule
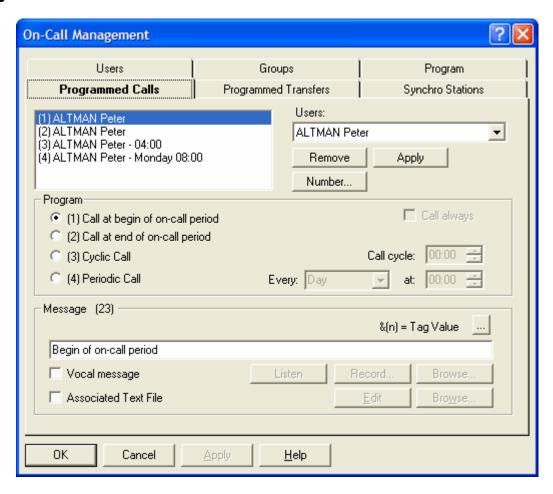
On call program of the group. This schedule defines in graphic form the weekly assignment of the teams of the selected group.

The teams programmed for each day of the week are represented by lines of the color of the team, on the high part of the day rows for the teams in normal duty (unconditional call), on the low part of the day tows for the teams in reduced duty (call only for priority alarms).

To assign a team to the on call program of the group, select it in the team list, then, using the mouse, trace on the weekly schedule the rectangular area corresponding to the wished on call period (over one or more days).

Note: the public holidays are defined in the general on call schedule by clicking in the schedule on the first column of the line corresponding to the desired day.

5.6   Programmed Calls

To configure the programmed calls, select the "**On call management…**" command in the "**Configuration**" menu, or click on the button ![icon]. On the displayed dialog box, select the "**Programmed calls**" tab.

The list on the top of the page displays the programmed calls for the user selected in the Users dropdown list. If the selection is "(all)", the list displays the programmed calls for all the users. In this case, it is not possible to create a new programmed call (**Add** button grayed).

A programmed call is defined by a line containing:

➢ the call type: (1) for a call at beginning of on-call period,

(2) for a call at end of on-call period,

(3) for cyclic call,

(4) for periodic call.

➢ the name of the user to call, possibly followed by the identifier in the dial number directory of the user of the specific number to call (under the form <Id>),

➢ the period of the cyclic call or the day and time of the periodic call.

To add a new programmed call

1) Select the concerned operator in the drop down list.

2) Select the programmed call type: call at the beginning of on-call period, call at the end of on-call period, cyclic call or periodic call.

3) In case of a cyclic call, define the call cycle.

In case of a periodic call, select in the **Every** drop-down list the day of the call (a specific week day or every days), then define the call time for the selected day.

4) Type the text message to send (see below).

5) Finally click on the **Apply** button.

If one wishes to designate a specific dial number for a programmed call, select the call in question in the list of programmed calls, click on the **Number...** button, then, in the displayed dialog box, choose the option "selected number" and select the number to call. The default option "programmed number" will use the active dial number for the user at the time of the call.

For a given user, only one cyclic call can be defined. But it is possible to define several periodic calls for the same operator.

To remove a programmed call

Select it in the programmed calls list then click on the **Remove** button.

To modify a programmed call

Select it in the programmed calls list, modify the wanted parameters then click on the **Apply** button.

Remark: if the call type or the period of a periodic call is changed, a new programmed call is created.

Option *Call always*

This option indicates, when checked, that the cyclic or periodic calls will be performed whatever is the on-call status of the concerned user. If it is not checked, the call will be performed only during the on call periods of the user.

Message

Text message to send during the programmed call (0 to 512 characters). The number of characters is displayed above the edit field.

- **Tag value**

  The message can contain variable fields. To incorporate in the message a tag value of the supervision list, click on the button ⬚. In the displayed dialog box, select the wished tag then validate. The numerical identifier of the tag is inserted in the edit field at the current cursor position, under the form: &(tag id).

- **Option *Vocal Message***
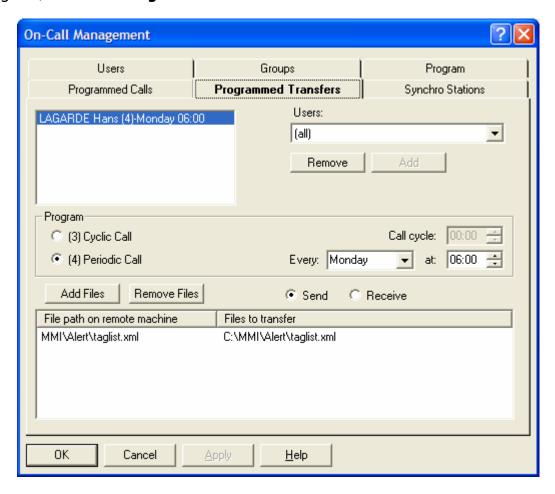
  If the operator has to be called by telephone, and if the voice synthesis option is not installed, validate this option then either record the vocal message (**Record...** button) or select it among the prerecorded messages (**Browse...** button).

- **Option *Associated Text File***

  Validate this option to associate a text file with the message. This file is used to transmit some further information by fax or email. It can be defined as "contextual" and incorporate the value of tags of the supervision list.

  Click on the **Edit** button to directly type the text to transmit or on the **Browse...** button to browse and select an existing text file on the disk.

5.7   Programmed file transfers

To configure the programmed files transfers, select the "**On call management…**" command in the "**Configuration**" menu, or click on the button 🖨. On the displayed dialog box, select the "**Programmed Transfers**" tab.

The list on the left top of the dialog box displays the programmed file transfers for the user selected in the **Users** dropdown list. If the selection is "(all)", this list displays all the programmed file transfers. In this case, it is not possible to create a new programmed file transfer (**Add** button is grayed).

The users proposed are those who have been configured with a number associated with a driver allowing the file transfer (Email, Alert Modem, Alert Socket, Alert Direct).

A programmed file transfer is defined by a line containing:

➢ the name of the user to call,

➢ the call type :   (3) for cyclic call,

                                    (4) for periodic call.

➢ the period of the cyclic call or the day and time of the periodic call.

The files to upload are designated in the transfer list at the bottom of the dialog box.
The right column describes the full path of the files on the local station.
The left column gives the name and the path that will have the files on the target station.

For a transfer by email, the files are attached files. Changes of name and path are ignored.

For a transfer performed by a synchronization driver (Alert Modem, Alert Socket, Alert Direct), the files will be copied in the download directory of the target station. This directory is defined on the target station in the parameters of the corresponding synchronization driver.

To create a new programmed file transfer

1) Select the concerned operator in the dropdown list.

2) Select the call type: cyclic call or periodic call.

3) In case of a cyclic call, define the call cycle.

   In case of a periodic call, select the day of the call (a specific week day or every days) in the dropdown list **Every**, then define the call time for the selected day.

4) Define the transfer direction:

   Send: the files are sent to the remote station (upload)

   Receive: the files are received from the remote station (download)

5) Select the files to send by clicking on the **Add Files** button. This action displays a dialog box to browse and select the files to add to the file list.

   To remove files from the list, select them in the file list the click on the **Remove Files** button.

6) Finally click on the **Add** button located below the user list.

For a given operator, only one cyclic file transfer can be defined. But it is possible to define several periodic file transfers for the same operator.

To delete a programmed file transfer

Select it in the programmed file transfer list then click on the **Remove** button.
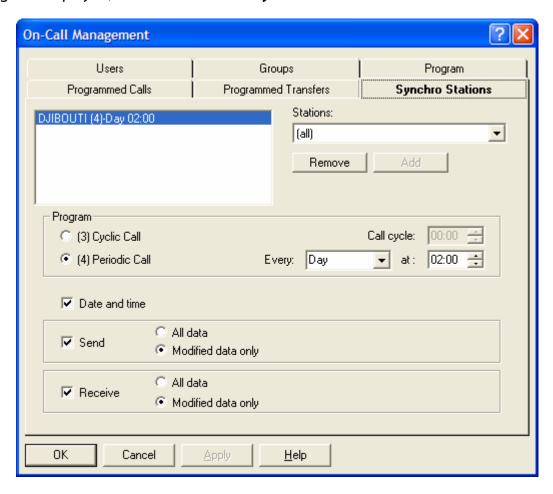
To modify a programmed file transfer

Select it in the programmed file transfer list, modify the wanted parameters then click on the **Add** button.

Remark: if the call type or the period of a periodic call is changed, a new programmed file transfer is created.

5.8 Programmed station synchronizations

To configure the programmed station synchronizations, select the "**On-call management**" command from the "**Configuration**" menu, or click on the button ![icon]. On the tabbed dialog box displayed, select the "**Stations synchro**" tab.

To be able to synchronize remote stations, it is necessary first to define for every remote station a (virtual) operator having a call number attached to a synchronization driver (Alert Modem, Alert Socket, Alert Direct).

The list on the left top of the dialog box displays the programmed synchronizations for the station selected in the **Stations** dropdown list.
If the selection is "(all)", this list displays all the programmed synchronizations. In this case, it is not possible to create a new programmed synchronization (**Add** button is grayed).

The station list displays the list of operators configured with a dial number attached to a driver allowing station synchronization (Alert Modem, Alert Socket, Alert Direct) and who have the same name as one of the defined station.

A programmed synchronization is defined by a line containing:

➢ the name of the station to call,

➢ the call type :   (3) for cyclic call,

                              (4) for periodic call.

➢ the period of the cyclic call or the day and time of the periodic call.

To create a new programmed synchronization

1) Select the concerned station in the dropdown list.

2) Select the call type: cyclic call or periodic call.

3) In case of a cyclic call, define the call cycle.

   In case of a periodic call, select the day of the call (a specific week day or every days) in the drop down list **Every**, then define the call time for the selected day.

4) Define the synchronization options:

   The synchronization options are:

   ➢ **Date and time**. The calling station set the date of the called station. To be able to set the date and time, the called station needs the Alert driver option "Date and time updates enabled" to be selected.

   ➢ **Configuration synchronization**. If the local station is the main station, the synchronized data are the data associated to the called station. If the local station is a remote station, the synchronized data are its own data. For both case, we can send and/or receive all the configuration data or only the modified data (since the last synchronization).

   The synchronized data are the users, the call groups, the teams, the alarm groups, the on-call schedule and the tags.

5) Finally click on the **Add** button located below the station list.

For a given station, only one programmed synchronization can be defined. But it is possible to define several periodic programmed synchronizations for the same station.

To delete a programmed synchronization

Select it in the programmed synchronizations list then click on the **Remove** button.

To modify a programmed synchronization
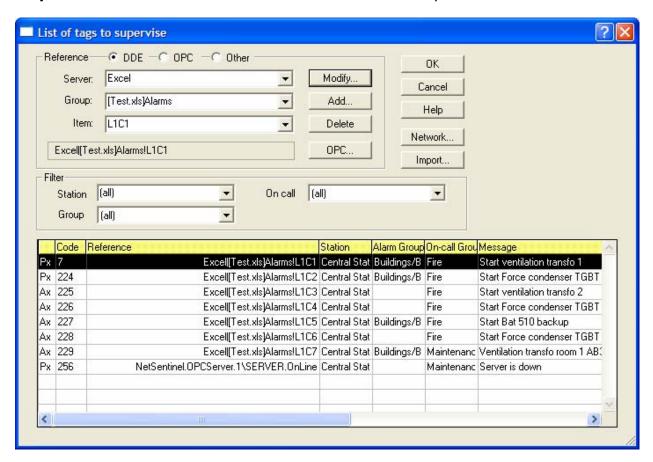
Select it in the programmed synchronizations list, modify the wanted parameters then click on the **Add** button.

Remark: if the call type or the period of a periodic call is changed, a new programmed synchronization is created.

5.9   List of tags to supervise

To define the list of variables to supervise, select the "**Supervision...**" command in the "**Configuration**" menu or click on the button ⊚.

This dialog box also can be called from the contextual menu associated with the branch "**Supervision**" in the tree of the main screen (see § 4.6.1.3 "*Supervision*").

Reference

This group defines the reference of the tag to add the list of tags to supervise. This reference can be of the following type:

- **DDE**   :   tag issued from a DDE server application

- **OPC**   :   tag issued from an OPC server application

- **Other**   :   other tag, updated by an external application (or by a specific mediator)

According to its type, a reference is defined by the following parameters:

- **Server**

   Name (or alias name) of the DDE or OPC server application containing the tag.

   This name can be:

   ➢ either selected in the list of the actives applications offering DDE services (if the tag is DDE type) by clicking on the arrow of the dropdown list,

   ➢ or automatically set by clicking on the "Network" button (see the remark below),

   ➢ or directly entered in the edit field (DDE or OPC server).

Note 1 (DDE server): if the DDE server application is located on another station, it is necessary to use the syntax of the NetDDE driver in service.

For the standard driver of Windows, the service name must be under the form "\\<**computer name**>**NDDE$**". The "Network" button allows the target computer to be browsed and the convenient name to be automatically generated. The service name and the topic concerned must be then implicitly designated in the "Group" field by a DDE share name[12] before registered on the computer in question.

Note 2 (OPC server): the available OPC servers can be browsed by clicking on the button "**OPC**".

- **Group**

  Topic name (or alias name) of the DDE server application.

  This name can be:

  ➢ either selected in the topic list of the server application (if it is able to supply this list) by clicking on the arrow of the dropdown list,

  ➢ or directly entered in the edit field, if the name is not found in the list.

  Note: if the selected server application is located on another computer, the name which must be entered here is the DDE share name of the concerned couple service-topic.

- **Item**

  Reference of the tag to supervise.

  This name can be:

  ➢ either selected in the item list of the selected topic (if the variable is DDE type and the server application is able to supply this list) by clicking on the arrow of the dropdown list.

  ➢ or directly entered in the edit field.

  If the defined tag is *Other* type, the name entered here is considered as a simple tag reference. The tag value (or its alarm status) will be only affected by an explicit command from an external application, a mediator or a communication driver.

Supervision list

This list contains all the supervised tags:

1st column:	codification of the tag type and supervision mode used (see below).
Code column:	numerical code for identification of the tag in the numerical messages. This code is generated automatically at creation time and can be modified later.
Reference column:	reference (DDE, OPC or other) of the tag.
Station column:	name of the station attached to the tag.
Alarm Group column:	name of the functional group to which belongs the tag.
On-call group column:	name of the on call group in charge of the tag.

---

[12] A **DDE share name** allows to designate with a same name the server application and a rubric of this application. It is used by NETDDE to establish DDE links on the network. It can be used also to automatically launch the server application if it is not active.

This share name can be defined by the server application, automatically or by configuration. In this case consult the documentation of the server application.

If the server application doesn't manage itself his share name, the share name can be defined by using the tool DDESHARE.EXE of Windows.

Message column: alphanumeric message attached to the tag (formatted).

The first character of the first column specifies the definite tag type:

"**P**"	=	tag defined as important alarm (*).
"**A**"	=	tag defined as no important alarm (*).
"**L**"	=	tag defined as alarm but without call (local alarm).
"**E**"	=	tag defined as simple event (event log, with or without call).
"**C**"	=	tag defined as acknowledgment command of the associated group (with call).
"**K**"	=	tag defined as acknowledgment command of the associated group (without call).
"**V**"	=	simple tag that can be referenced otherwise to display its value.

The second character defines how the tag is polled:

"**x**"	=	permanent polling (DDE or OPC).
"**r**"	=	periodic request (DDE or OPC).
"**o**"	=	DDE request on alarm detected in the group.
"**-**"	=	no polling.

(*) A tag is defined as priority when its priority level is greater than or equal to the minimal level definite in alarm options. A priority alarm always provokes the call of operators of the on call group, that it is in period of reduced duty or not.

The dropdown lists **Station**, **Group** and **On Call** allow the visualized list to be reduced to the tags belonging to the join of the selected entities.

Button *Network...*

This button is only validated when the network resources are available.

It allows a computer containing the wanted DDE server application to be selected on the network.

Once this computer is selected, the service name is automatically updated. It is then sufficient to enter, in the "group" field, the DDE share name of the couple service-topic concerned and the name of the tag to supervise in the "item" field.

Button *OPC...*
Click on this button to browse OPC servers, select one and import tags from this one.

Bouton *Add...*

Click on this button to create the selected tag. A new dialog box is displayed to define the properties of the tag (see § 5.11 *"Tag properties"*). After validation, the tag is added to the supervision list.

Button *Modify...*

Click on this button to edit the properties of the tag selected in the supervision list (see § 5.11 *"Tag properties"*). A double-click in the supervision list produces the same effect.

Button *Delete...*

Click on this button to remove the tag selected in the supervision list.

Button *Import...*

Click on this button to import the list of tags defined in the supervised application, with all their attributes (alarm messages, priority...). This button is only validated when a

"Mediator" module is selected in the "Options"-"Supervision" dialog box and if this module supplies the import service.

After validation by clicking on the **OK** button, the defined DDE and OPC connections are automatically established.

5.10   Selection of an external tag

This dialog box is used to browse and select an external tag to supervise.
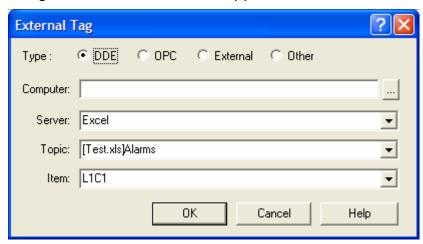
It can be called to define an external reference of tag, by selecting the command "**Add a tag**" in the contextual menus attached to the "**Tags**" tree of the main screen or its associated views.

It also can be called to modify an external reference, by selecting the command "**Definition**" in the contextual menu attached to the tag views.
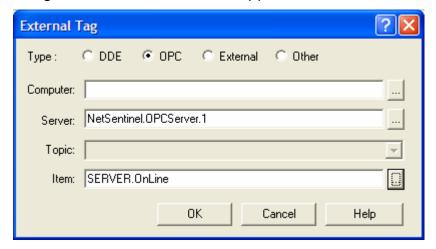
Type

Type of the server containing the tag to supervise:

- **DDE** : tag issued from a DDE server application

- **OPC** : tag issued from an OPC server application

- **External** : tag issued from a communication driver (logical or analogical I/O)
- **Other** : other tag, updated by an external application (or by a specific mediator)

Computer

Name of the computer where is located the server which contains the tag. If the server is located on the local station, this field must be empty.

Enter the name of the computer (or its IP address) or click on the button ⬚ on the right of the field to select a computer of the network.

This field is only displayed when the type of the server is **DDE** or **OPC**. It is not modifiable if the dialog box is called from a <**data server name**> view of the main screen.

Driver

Selection of the acquisition driver. Only the installed communication drivers which have capabilities of input acquisition (Advantech, ...) are proposed in the list.
This field is only displayed when the type of the server is **External**.

Server

Designation / Selection of the DDE or OPC server.

DDE Server: Enter the name of the DDE server or select it in the dropdown list. Only the active DDE servers are proposed in the list (if they properly answer to the requests for DDE server enumeration) or those which have been prior registered for NETDDE sharing.

OPC Server: Enter the name of the OPC server or click on the button ⬚ on the right of the filed to select one of the OPC server registered on the computer designated in the field **Computer**.

This field is only displayed when the type of the server is **DDE** or **OPC**. It is not modifiable if the dialog box is called from a <**data server name**> view of the main screen.

Topic

Designation / Selection of the DDE topic or external module.

DDE Server: Enter the name of the DDE topic or select it in the dropdown list if the DDE server designated in the field **Server** proposes a list of topics.

Driver: Select in the dropdown list one of the subsets (card, module) proposed by the driver designated in the field **Driver**.

This field is only displayed when the type of the server is **DDE** or **External**. It is not modifiable if the dialog box is called from a <**data server name**> view of the main screen.

Item

Designation / Selection of the tag.

DDE Server: Enter the name of the DDE tag or select it in the dropdown list if the DDE server designated in the field **Server** proposes a list of tags for the topic designated in the field **Topic**.

OPC Server: Enter the name of the OPC tag or click on the button ⬚ on the right of the field to browse the server designated in the filed **Server** and running on the computer designated in the field **Computer** then select a tag.

Driver: Select in the dropdown list one of the tags proposed by the driver designated in the field **Driver**, for the subset designated in the field **Topic**.

Other: Enter the name of the tag, as it will be referred to by the external application (or the mediator) in the alarm commands.
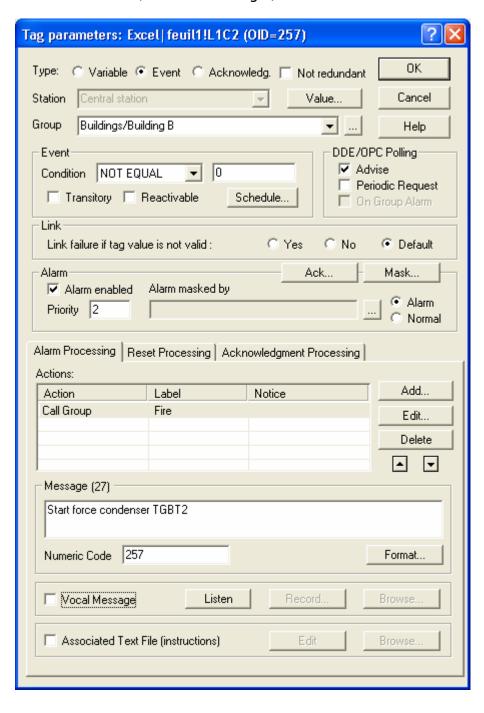
5.11 Tag properties

This dialog box defines the main properties of the supervised tags.

It can be called from the **configuration of supervision list**, by clicking on the "**Add...**" button or the "**Modify...**" button in the dialog box displaying the variable list (see § 5.9 "*List of tags to supervise*").

It also can be called from the contextual menu associated with the branch "**Variables**" in the screen of the main screen (see § 4.6.1.4 "*Tags*").

Type

The type of tag defines the usage of the tag in the application.

Variable   Simple tag only declared to be able to get its value and that can be referenced in an alarm message (see *Message format*) or a contextual instruction file to display its current value.

Event   Variable associated with an event condition for recording of the changes of state of the event in the event log. A list of actions to execute (calls of groups or operators, commands …) can be associated with each change of state of the event (set, reset). An event is processed like an alarm if the "alarm enabled" option is checked.

Acknowledg.   Variable associated to an event condition, but used to bring up an acknowledgment request for the associated alarm group from a supervised device (acknowledgment hard button) or through a communication driver. If there is no alarm group designated for the variable, the field message must contain a valid operator name. This name will be used to search for and to acknowledge the oldest group in alarm for which a call has been transmitted to the operator in question. See note on the bottom of the page[*].

Option *Not redundant*

A tag can be defined of non redundant type to specify, in the case of an installation of 2 stations in redundancy, that this tag is specific to the local station and that the automatic procedure of synchronization of the redundant stations should not recopy it on the distant station. Moreover, for the tag of the event type associated with a call group action, the activation of the non redundant event will always trig the call of the group, whatever is the activation status of the station.

Station

The station defines a subset of the application corresponding to a specific entity, geographical (site) or organisational (company, trade ...). The definition of a station makes it possible to separately treat subsets of tags and operators, with all associated information (on call schedule, alarm table, alarm history, event log). By default the tags are attached to the local station (first station displayed in the main screen).

Group

The group referred in this dialog box is the **basic functional group** to which the variable is attached.

A functional group allows tags concerning a specific entity (machine, room, category ...) to be grouped. It makes it possible to organize and visualize alarms by groups (alarm table, alarm history) and to be able to execute certain treatments on the level of the groups (acknowledgment, masking, statistics ...).

---

[*] **Usage of an acknowledgment type tag**

When the tag is type **acknowledgment**, the change of state of the tag to the event state provokes the acknowledgment of all alarms belonging to the **basic functional group** associated with the tag.

If there is no functional group associated with the tag, the field "**Message**" must contain the name of a valid operator in order to be able to search for the oldest alarm group transmitted to this operator and acknowledge alarms of this group (with the name of the operator in question).

If a **Call group** action is defined, a call is triggered to the operators concerned by the acknowledgment of the associated alarm group, with transmission of the formatted message of the tag.

Example   message format: "Acknowledgment of &G alarms by &M"
             message: "Peter HENRY"
             associated group: "Boiler room"
             message transmitted: "Acknowledgment of Boiler room alarms by Peter HENRY"

A tag can belong to several groups. The basic functional group, selected in this field, present some additional functionalities:

➢ Possibility of integrating the name of the basic group in the alarm message by inserting the string "&G" in the associated message format (see § 5.11.5 *"Definition of message format"*).

➢ Possibility of playing the audio message of the basic group before the audio alarm message, or in substitution if the alarm message is empty.

➢ Possibility of performing only one call for all alarms of the group when this option is enabled on the level of the call driver.

➢ Possibility of acknowledgment of the basic group of an alarm ordered from a driver (vocal ...).

If this field is empty, the tag is attached to no basic group.

The button ⬚ on the right of the field gives access to the configuration of the properties of the selected group (see § 5.14 *"Tag group properties"*).

Button *Value...*

Click on this button to define the display format of the value of the tag. See § 5.11.1 *"Format of a tag value"*.

DDE / OPC Polling

If the reference of the tag is a **DDE** or **OPC** reference, the polling mode of the tag must be defined:

➢ *Advise*: When this option is checked, the tag will be put in permanent polling, by the means of a DDE or OPC ADVISE request near the concerned server. The supervised tag then will be automatically transmitted by the server to each change of its value, without any other request being necessary.

➢ *Periodic Request*: When this option is checked, the concerned tag will be the subject of explicit and periodic DDE or OPC requests. These requests make it possible to control that the supervised application is always active (watchdog). The polling period and the response timeout can be adjusted in the supervision options (see § 7.2 "Supervision options"). This option should be validated only for a restricted number of tags, insofar as the active polling is consuming resources and as it is not useful to test several variables to check that the supervised application is always active.

➢ *On Group Alarm*: When this option is checked, the concerned tag will make the object of DDE requests every time an alarm of the same functional group will change of state (activation or deactivation of alarm).
This option reduces the number of DDE transactions (economy of resources system), by regrouping alarms of the same group on one alarm ("OR" alarms) set in DDE advise. The real source of the alarm is provided by reading at this moment all tags of the group having option "On group alarm".

Event

• The **event condition** defines the state in which the tag must be considered as an event. This condition can be logical (logical state represented by a name, mask of a logical state of the tag) or analogical (comparison with a value, in equality or going beyond of high or low threshold).

To define an event condition, in reference to a value "X" of reference, the following operators are proposed:

NONE	No event condition, event will be trigged from an external application
DIFFERENT	Event if value is not equal to X
EQUAL	Event if value is equal to X
HIGHER	Event if value is higher than X
LOWER	Event if value is lower than X
HIGHER SAME	Event if value is higher than or equal to X
LOWER SAME	Event if value is lower than or equal to X
AND	Event if a bit defined as 1 [13] into X is 1 into the value
NOT AND	Event if a bit defined as 1 into X is 0 into the value
SUPVAR	Event if the variable variation during a time of T seconds is higher than the value V. V and T are defined by the value X = "V;T"
INFVAR	Event if the variable variation during a time of T seconds is lower than the value V. V and T are defined by the value X = "V;T"

(*) The state of a bit is defined by the corresponding bit in the value "X" converted in hexadecimal. Example: for the bit mask 00010000, translate in hexadecimal (10h), then type the value converted in decimal (16).

The value "X" entered in edit field can be numeric (positive or negative, integer or float) or alphanumeric. A value is defined as numeric if it begins by one of the following characters: '+','-','0','1','2','3','4','5','6','7','8','9', or '.'

If the value entered is alphanumeric, only the operators **NOT EQUAL** and **EQUAL** are available, the other operators being accepted but treated as EQUAL (HIGHER OR SAME, LOWER OR SAME) or NOT EQUAL (all the others).

Examples

➢ **Event upon change to high state (non null):**

Condition: NOT EQUAL ▼ | 1

(Condition proposed by default)

➢ **Detection of crossing high threshold:**

Condition: HIGHER ▼ | 117.4

The value to not to go across is 117,4.

Remark:

It is possible to supervise a high threshold and a low threshold for the same variable by defining 2 events with the same reference. An event will be associated to the high threshold crossing (as above) with the adequate messages. The other will be associated to the low threshold crossing (LOWER or INF EGAL) with correspondent messages.

---

[13] The state of a bit is defined by the corresponding bit in the value "X" converted in hexadecimal. Example: for the bit mask 00010000, translate in hexadecimal (10h), then type the value converted in decimal (16).

> ➤ **Supervision of a "watchdog" variable :**

If the variable does not change (at least 1 unit) during 3 seconds, the event is activated.

- The **Transitory** option indicates the transitory (or pulsed) state of an event. A transitory event (passage of door...) is only logged when changing to event state (not when returning to the normal state, this last being implicit).

- The **Reactivable** option indicates that the event can be reactivated without passing by a return to the normal state. A reactivable event is consigned to each change of state corresponding to an event condition. This option is necessary for example when the tag receives messages and must start a treatment each time it receives a message.

- The **Schedule...** button opens a dialog box to define time areas for event invalidation, alarm masking or call inhibition. See § 5.11.2 *"Event schedule"*.

Link

When the option is activated, a link failure is set on tags with invalid values despite a successful link. (For example: a bad quality in OPC). If default is selected, the option is set by the data server property.

Alarm

- The **Alarm enabled** option indicates that the event will be processed as an alarm: recording in the alarm table and alarm history, acknowledgment required, possibility of masking.

- The **Priority** parameter defines the priority level of the alarm. The priority level determines the order of alarms in the alarm table (and therefore the transmission order of messages), the most important alarms being at the head, as well as the order of the calls when several alarms are detected simultaneously.

  The priority level also conditions the call processing. If the priority level is lower than the minimal level defined in the alarm options (see § 7.4 *"Alarm options"*) for "reduced duty" period, and if the attached on-call group is in a "reduced duty" period when the event is detected, the call will be delayed until the end of this period (unless alarm is acknowledged meanwhile).

  The priority level can be defined between "0" and "9999". By default, "0" is the lowest priority. However, the priority order can be reversed in the general alarm options.

- The field **Alarm masked by** defines an alarm tag which will automatically mask the alarm defined in the dialog box when it will be in alarm state ("alarm" option) or in normal state ("normal" option).

  When the **Alarm** option is checked, the alarm defined in the dialog box will be automatically masked if the tag referenced in the edit field is in alarm state. This avoid alarm avalanche in certain circumstances (power failure for example). The alarm masked by an active alarm is processed as a simple event (only recorded in event log).

  When the **Normal** option is checked, the alarm defined in the dialog box will be activated only when the tag referenced in the edit field is in alarm state (alarm masked by normal state of the other alarm). This allows an alarm to be activated only when two alarms are simultaneously active (AND of two alarms).

  To define a masking tag, click on the button [...] on the right of the field and choose the wanted tag in the displayed list. The "mask" tag must have been beforehand defined.

- The **Ack...** button gives access to the configuration of the acknowledgment conditions of the alarm by DDE or OPC and to the definition of the auto-acknowledgment properties of the alarm. See § 5.11.3 *"Properties of alarm acknowledgment"*.

- The **Mask...** button gives access to the configuration of the masking conditions of the alarm by DDE or OPC. See § 5.11.4 *"Properties of alarm masking"*.

Associated information

With each change of state of the event (activation, return to the normal state, alarm acknowledgment), numerical, alphanumeric and vocal messages can be associated.

- The **numerical code** is used to identify the alarm in the messages which can only be transmitted under numerical form (beeper…).

  This code is automatically assigned at the time of the creation of the tag. It can be modified (1 to 32 characters), no numerical characters being accepted, however being careful that these characters are allowed by the transmission system used for the numerical messages.

  Call forward: the numerical code also can be used to define a telephone number or an operator name to call back. In this case, the code (or operator name) must be preceded by the character "!". After the called operator, following the activation of the corresponding alarm or event, has listened to the associated audio message, the number specified in this field is automatically called back, followed by the call forward.

- The **Alphanumeric message** is used to identify the event in the event log and the alarm table and for all media accepting alphanumeric messages (SMS, paging systems, fax...). It can contain up to 512 alphanumeric characters, the number of characters typed being displayed in bracket on the right of the field title.

  This message can be formatted at the time of the event to include information associated with (group, code, reference, priority, value) or the current value of other variables. Click on the **Format** button to define the format associated with the message (see § 5.11.5 *"Definition of message format"*).

- A **vocal message** can be associated with the variable to identify the event during telephonic communications. It can also be played locally at the time of the event if the PC is provided with a sound card and if the option "play vocal message" is validated in alarm options (see § 7.4 *"Alarm options"*).

  Click on the **Browse...** button to browse files for a sound file containing a pre-recorded audio message. It can be a message recorded by telephone and stored in the "MESSAGE" subdirectory, with a name under form "MTxxxx.WAV", "xxxx" being between "0000" and "9999".

  Click on the **Record...** button to directly record an audio message. The name of the created sound file is automatically generated under the form "MAxxxx.WAV", "xxxx" being a numeric code between "0000" and "9999". This button can be used also to modify an audio message already recorded (silence truncation at end of the message for example).

  Click on the **Listen** button to play on the sound card of the PC (if it exists) the audio message associated with the event.

  Remark:

  When the option "**voice synthesis from the text**" is validated, the vocal message can be synthesized directly from the formatted alphanumeric message. This synthesis is performed every time the tag goes to the event state, what makes possible to vocally time stamp the event (on option) and to include dynamic information in the vocal message (value of the tag or other tags).

To test the voice synthesis of the typed message (with the present formatting parameters) click on the **Listen** button.

- A **text file** can be associated with the event when it is defined as an alarm. This file allows instructions or contextual information concerning the event to be transmitted with the alarm message. It is used to display information (instructions) in the alarm table and to transmit these information by fax or by email.

  Click on the **Edit...** button to directly enter the text to transmit. This text is recorded in the MESSAGE subdirectory, under the form of a text file whose name is affected automatically with the "INSTxxx.TXT" format, "xxxx" being a numeric code between "0000" and "9999". See § 5.11.6 *"Edition of instruction file"*.

  Click on the **Browse...** button to browse files for an existing text file on the disk.

<u>Actions</u>

For each change of state of the event (event activation, event reset, alarm acknowledgment), a list of actions can be defined.

The possible actions are:

➢ **Call group**	call the group designated in the 2nd column with option of inhibition (1) or delay (indicated in the 3rd column).
➢ **Call user**	call the user (2) designated in the 2nd column with option of forcing the called number (indicated in the 3rd column).
➢ **Execute script**	execute the message processor script (3) designated in the 2nd column.
➢ **Execute command**	execute the command designated in the 2nd column with option of forcing the written value (indicated in the 3rd column).
➢ **Stop command**	stop the execution of the command designated in the 2nd column.
➢ **Execute application**	launch the application designated in the 2nd column.
➢ **Play tone**	play the sound file attached to the called group or designated in the 2nd column.
➢ **Play vocal message**	play the vocal message attached to the alarm or designated in the 2nd column (wave file or text to synthesize).

(1) The action "Call group" attaches the tag to the designated group and consecutively authorizes the users of the group in question to have access to that tag (for status consultation and acknowledgment). If the tag must be accessible to a group that we do not want to call, a call group action with call inhibition must nevertheless be defined.

(2) The action "Call user" produces a type "service message" call but does not attach the tag to the called user. If the user does not belong to any of the groups to call, he will not have access to the tag (status consultation, acknowledgment).

(3) A script can be used to parse the event and consecutively activate alarms or to trig actions in response to the event. Only the Message Processor scripts that are defined with the "Alarm" interface can be executed. These scripts are started at the software launching time and have to block themselves for waiting the event (instruction RECEIVEALARM).

Click on the **Add...** button to add an action to the action list.

Click on the **Edit...** button to modify the action selected in the action list.
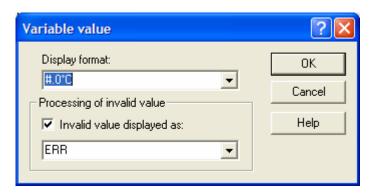
Click on the **Delete** button to remove the action selected from the action list.

Use the buttons ▲ and ▼ in order to respectively move up or down the action selected in the action list. The actions are simultaneously executed regardless of the others, but the execution order is the list order.

5.11.1 Format of a tag value

This dialog box, called during the configuration of an event (see above), defines the format to use to display the value of the tag in the tables and views of the main screen and in the transmitted messages.

Display format

This format (type Excel) can contain any alphanumeric character with the following specific treatments:

    #   display only significant digits (non significant zeros are not displayed).

    0   (zero) display non significant zeros if a number has less of digits than there is zeros in the format

Examples:

# ###,#	1234,56	displayed under the form	1 234,6
#,000	8,9	displayed under the form	8,900
0,#	631	displayed under the form	0,6
#,0#	12	displayed under the form	12,0
	1234,568	displayed under the form	1234,57
#,0 °C	25	displayed under the form	25,0 °C
	25,678	displayed under the form	25,7 °C

This format can be entered or selected in the dropdown list among the existing formats (already defined).
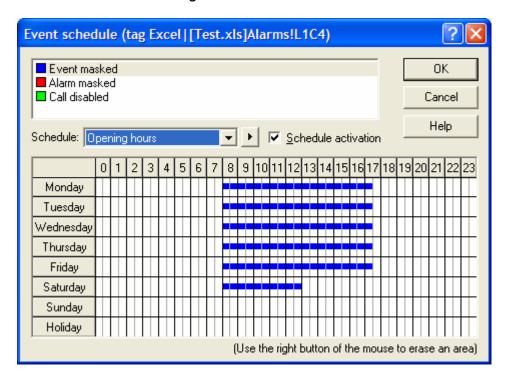
Invalid value treatment

Check the "**Invalid value displayed as**" option to display a specific label for the tags whose value is invalid or uncertain (disconnected tag or defect sensor).

The label to display is defined in the field below. This label can be entered or selected in the dropdown list among the existing labels (already defined).

5.11.2 Event schedule

This dialog box, called during the configuration of an event (see above), defines time areas for event invalidation, alarm masking or call inhibition.

Event masked

During the **Event masked** time areas, the event (or alarm) is completely ignored (no trace in the event log).

Remark: An event trigged during a masking period will not be detected at the end of the masking period, even it is yet active at this time. A new activation of the event, out of the masking period, will be necessary to provoke the consequent treatments.

Alarm masked

During the **Alarm masked** time areas, the alarm is automatically masked. The treatment performed on the alarm activation is the same as for the masked alarms (trace "event" in the event log, masking in the alarm table, actions disabled).

Call disabled

During the **Call disabled** time areas, the event (or alarm) is normally processed, but the call actions (group or user) are disabled.

Schedule

The schedule of an event can be selected in the dropdown list among schedules which were beforehand defined for other events. The choice **(none)** means that there is no schedule associated with the event (choice by default).

To define a new schedule, first select, if possible, schedule closest to that desired. Click on the button ▶ on the right of the dropdown list then select in the displayed menu the command **New**. After having entered the name of the new schedule, draw the desired schedule in the time table then validate by clicking on the **OK** button.

The name of the selected schedule can be modified by selecting the command **Rename** in the menu which is displayed when clicking on the button ▸ on the right of the dropdown list.

The command **Remove** of the same menu delete the selected schedule. This deletion will affect alls the tags which share this schedule.

Schedule activation

Check the **Schedule activation** checkbox to activate the configured schedule.
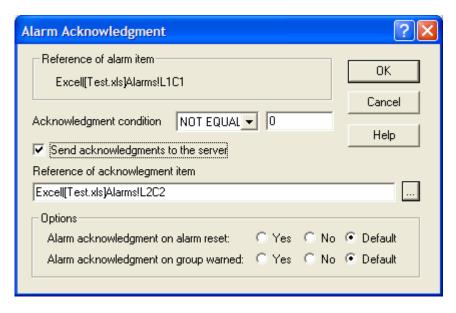
Time table

To define a time area of masking or inhibition, select the desired type of masking or inhibition in the list top. Bring the mouse pointer on the timetable, on the cell corresponding to the week day and begin time of the wanted time area, press the left button of the mouse, then drag the mouse pointer, keeping the button pressed, to the cell corresponding to the last hour of the last day of the chosen time area. Finally release the button.

To erase a time area, redo the same operation, but by using the right button of the mouse.

5.11.3   Properties of alarm acknowledgment

This dialog box, called during the configuration of an event (see above), defines the conditions of the acknowledgment of an alarm by DDE or OPC. It also defines the auto acknowledgment properties of the alarm.

Reference of alarm item

This field displays the reference of the event which one wishes to define acknowledgment conditions.

Acknowledgment condition

The acknowledgment condition is the state which indicates that the alarm is acknowledged in the external application. This condition can be logical (logical state represented by a name, mask of a logical state of the tag) or analogical (comparison with a value, in equality, threshold condition).

To define an acknowledgment condition, in reference to a "X" value, the following operators can be used:

NONE	No acknowledgement condition is defined (by default)
NOT EQUAL	Acknowledgement if value is not equal to X
EQUAL	Acknowledgement if value is equal to X
HIGHER	Acknowledgement if value is higher than X
LOWER	Acknowledgement if value is lower than X
HIGHER SAME	Acknowledgement if value is higher than or equal to X
LOWER SAME	Acknowledgement if value is lower than or equal to X
AND	Acknowledgement if a bit defined as 1 [14] into X is 1 into the value
NOT AND	Acknowledgement if a bit defined as 1 into X is 0 into the value
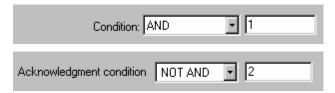
 (*)The state of a bit is defined by the corresponding bit in the value "X" converted in hexadecimal. Example: for the bit mask 00010000, translate in hexadecimal (10h), then type the value converted in decimal (16).

The reference value "X" can be numeric (positive or negative, integer or float) or alphanumeric. A value is defined as numeric if it begins by one of the following characters: '+', '-', '0', '1', '2', '3', '4', '5', '6', '7', '8', '9' or '.'

If the reference value is alphanumeric, only the operators **NOT EQUAL** and **EQUAL** are available, the other operators being accepted but treated as EQUAL (HIGHER OR SAME, LOWER OR SAME) or NOT EQUAL (all the others).

The tested variable is that defined by the selection **Reference of acknowledgment item**. This item can be different or identical to the item referenced to define the event.

Example of utilization of the simultaneous transmission in the same variable of an alarm condition and an acknowledgment condition:

Condition: AND ▾ 1

Acknowledgment condition NOT AND ▾ 2

This example corresponds to the following table:

0	No alarm
1	Acknowledged alarm
2	Alarm reset but not acknowledged
3	Alarm not acknowledged

Send acknowledgments

This option enables, when checked, the transmission to the supervised application of the acknowledgments performed through ALERT, locally, by telephone or from a remote terminal. This transmission corresponds to a DDE or OPC write command of the value

---

[14] The state of a bit is defined by the corresponding bit in the value "X" converted in hexadecimal. Example: for the bit mask 00010000, translate in hexadecimal (10h), then type the value converted in decimal (16).

defined as acknowledgment condition. That supposes that the supervised application is able to interpret the write of value in the item in question like an acknowledgment command.

➢ **If the definite value is not numeric**, the acknowledgement is required, for acknowledgment conditions *EQUAL*, *HIGHER SAME*, *LOWER SAME*, by transmission of the associated string, and for the other conditions, by transmission of an empty string.

➢ **If the definite value is numeric**, the following treatment will be made, in function of the acknowledgment condition:

- EQUAL, HIGHER SAME or LOWER SAME
  Transmission of the associated value.

- NOT EQUAL or HIGHER
  Transmission of the value + 1.

- LOWER
  Transmission of the value – 1.

- AND
  Transmission of the result of LOGICAL OR between the current value of the variable and the mask defined by the associated value.

- NOT AND
  Transmission of the result of LOGICAL AND between the current value of the variable and the inverse of mask defined by the associated value.

Reference of acknowledgment item

This group defines the item of the supervised application which contains the acknowledgment information in reading and, if the option **Send acknowledgments...** is validated, the control of acknowledgments in writing. By default the reference of the event tag is proposed.

Alarm acknowledgment on alarm reset

When this option is selected (choice **Yes**), the alarm will be automatically acknowledged when the alarm condition disappears (event reset).

The choice **Default** means that the option value is defined by the general option for automatic acknowledgment on event reset defined in alarm options (see § 7.4 "*Alarm options*").
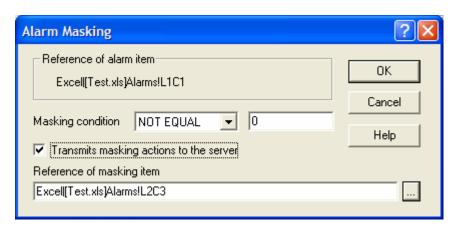
Alarm acknowledgment on group warned

When this option is selected (choice **Yes**), the alarm will be automatically acknowledged when the associated on call group (or the first group if several groups are called) was informed successfully.

The choice **Default** means that the option value is defined by the general option for automatic acknowledgment on group warned defined in alarm options (see§ 7.4 "*Alarm options*").

5.11.4   Properties of alarm masking

This dialog box, called during the configuration of an event (see above), defines the conditions of the masking of an alarm by DDE or OPC.

Reference of alarm item

This field displays the reference of the event which one wishes to define masking conditions.

Masking condition

The masking condition is the state which indicates that the alarm is masked in the external application. This condition can be logical (logical state represented by a name, mask of a logical state of the tag) or analogical (comparison with a value, in equality, threshold condition).

To define a masking condition, in reference to a "X" value, the following operators can be used:

NONE	No masking condition is defined (by default)
NOT EQUAL	Masked if value is not equal to X
EQUAL	Masked if value is equal to X
HIGHER	Masked if value is higher than X
LOWER	Masked if value is lower than X
HIGHER SAME	Masked if value is higher than or equal to X
LOWER SAME	Masked if value is lower than or equal to X
AND	Masked if a bit defined as 1 [15] into X is 1 into the value
NOT AND	Masked if a bit defined as 1 into X is 0 into the value

(*)The state of a bit is defined by the corresponding bit in the value "X" converted in hexadecimal. Example: for the bit mask 00010000, translate in hexadecimal (10h), then type the value converted in decimal (16).

The reference value "X" can be numeric (positive or negative, integer or float) or alphanumeric. A value is defined as numeric if it begins by one of the following characters: '+', '-', '0', '1', '2', '3', '4', '5', '6', '7', '8', '9' or '.'

---

[15] The state of a bit is defined by the corresponding bit in the value "X" converted in hexadecimal. Example: for the bit mask 00010000, translate in hexadecimal (10h), then type the value converted in decimal (16).

If the reference value is alphanumeric, only the operators **NOT EQUAL** and **EQUAL** are available, the other operators being accepted but treated as EQUAL (HIGHER OR SAME, LOWER OR SAME) or NOT EQUAL (all the others).

The tested variable is that defined by the selection **Reference of masking item**. This item can be different or identical to the item referenced to define the event.

Transmits masking actions to the server

This option enables, when checked, the transmission to the supervised application of the masking actions performed through ALERT, locally, by telephone or from a remote terminal. This transmission corresponds to a DDE or OPC write command of the value defined as masking condition. That supposes that the supervised application is able to interpret the write of value in the item in question like a masking command.

➢ **If the definite value is not numeric**, the mask activation is required, for masking conditions *EQUAL*, *HIGHER SAME*, *LOWER SAME*, by transmission of the associated string, and for the other conditions, by transmission of an empty string.

➢ **If the definite value is numeric**, the following treatment will be made, in function of the masking condition:

- EQUAL, HIGHER SAME or LOWER SAME
  Transmission of the associated value.

- NOT EQUAL or HIGHER
  Transmission of the value + 1.

- LOWER
  Transmission of the value – 1.

- AND
  Transmission of the result of LOGICAL OR between the current value of the variable and the mask defined by the associated value.

- NOT AND
  Transmission of the result of LOGICAL AND between the current value of the variable and the inverse of mask defined by the associated value.
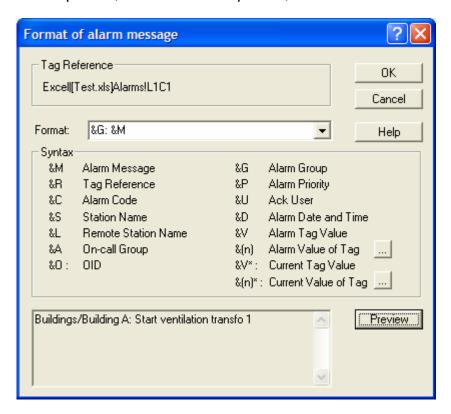
Reference of masking item

This group defines the item of the supervised application which contains the masking information in reading and, if the option **Transmits masking...** is validated, the control of masking actions in writing. By default the reference of the event tag is proposed.

5.11.5   Definition of message format

This dialog box, called during the configuration of an event (see above), defines a character string which will be used to format the alarm message (or reset or acknowledgement message) of a specific tag.

If the format string is empty (default value), the used format will be the **default format**, defined in the alarm options (see § 7.4 "*Alarm options*").

Item reference

This field displays the reference of the tag of which one wishes to define the message format.

Message format

The message format defines a composite message that will be created at the time of the alarm (or reset or acknowledgment).

This format can be selected in the dropdown list among the already defined formats or directly entered in the edit field.

Syntax

The format can contain some invariant parts, reproduced as they are, and some variable parts, that make reference to parameters of the alarm, by using the following syntax:

&M   This field will be replaced by the alphanumeric message of the tag.

&R   This field will be replaced by the reference of the tag.

&O   This field will be replaced by the unique numeric identifier of the tag (Oid).

&C   This field will be replaced by the numeric code of the tag.

&S   This field will be replaced by the current value of the station name.

&P   This field will be replaced by the value of the alarm priority.

&G This field will be replaced by the name of the alarm group associated with the tag.

&A This field will be replaced by the name of the call group associated with the tag.

&V This field will be replaced by the value of the tag at the event time.

&V* This field will be replaced by the current value of the tag.

&L This field will be replaced by the current value of the station name, only if the station is not the local station.

&U This field will be replaced by the name of the user who acknowledged the alarm.

&D This field will be replaced by the date and time of the alarm with the format "MM/DD/YY HH:MM/SS"

&[ref] This field will be replaced by the value of the tag referenced by "ref" (reference in the supervision list), at the event time.

&(id) This field will be replaced by the value of the tag identified by "id" (identifier in the supervision list), at the event time.

&(id)* This field will be replaced by the current value of the tag identified by "id" (identifier in the supervision list), at the time of the message transmission.

The buttons ⊡ allow the value of a contextual variable to be inserted (current value or value at the alarm time) more easily than by entering the syntax "&[ref]" or "&(id)" as described above. After clicking on this button, select in the displayed list the wanted variable, then validate. The selected variable will be inserted automatically in the text, with the syntactic form "&(id)", at the end of the text already entered in the format edit field.

Note: the fields &V, &V*, &(id), &(id)*, &[ref] can be followed up by a display format in square brackets. The display format defined here is the same as this defined for the display format of a tag (see § 5.11.1 *Format of a tag value*). If a display format is defined at the level of the inserted value, it is replaced by the format defined here.

  Example: &V[#.0] The value 12 will be replaced by 12.0

Button *Preview*
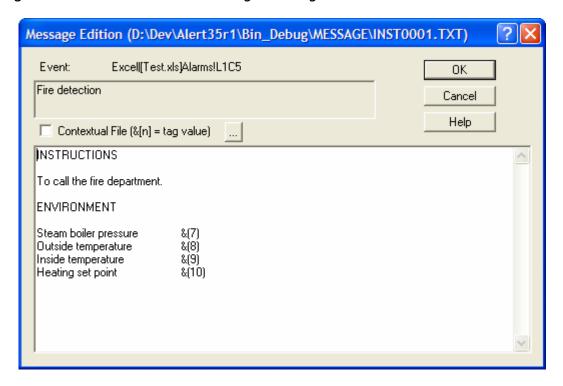
Click on this button to have a preview of the message generated with the definite format. The displayed parameter values are the current values.

The **item reference** is the reference of the variable of which one wishes to define the message format.

5.11.6 Edition of instruction file

This dialog box allows the edition of the instruction file that will be transmitted on alarm or user message sending (manual or programmed call).

It can be called from the dialog boxes of definition of the tag properties (see § 5.11 "*Tag properties*"), of configuration of the programmed calls (see § 5.6 "*Programmed Calls*") or of message transmission (see § 6.9 "*Sending a message*").

Event

This field displays the reference of the alarm of which one wishes to edit the instruction file. If the file is attached to a service message, this reference is replaced by "Service Message ".

The associated alphanumeric message, previously defined for the alarm variable or for the message to send, is displayed in the first edit field. This message is not modifiable here.

Contextual File

This option indicates that the edited file can include some contextual information (prefixed by "&"), and that these information should be automatically updated at the time of the associated alarm (or at call time if the file is associated with a service message or a programmed call).

File content

The multi-lines edit field allows the wanted text to be entered. This text can include tabulations and carriage returns.

If the **Contextual File** option is checked, the text can contain fields of type "&[ref]" or "&(id)", "ref" designating the alphanumeric reference of the tag, "id" its numeric identifier.

By clicking on the button ☐, then by selecting the wanted tag in the displayed list, one can create automatically a field of type "&(id)".

These fields will be replaced at the alarm time by the current value of the tag designated by its reference "ref" or its identifier "id". The referenced tags must have been previously defined in the list of tags to supervise.

<u>NOTE</u>

When the file is intended for transmission to a fax, it is possible to incorporate one or several bitmaps in the instruction file by inserting to the wanted line for each bitmap a line with the following format:

&F<FILE>[,<H>[,<P>]]

with:

<FILE>	Name of the bitmap file (relative name or full path).
<H> (optional)	Height of the bitmap in mm, 0 by default to use the originated dimension of the bitmap. When the bitmap is resized in height, its width is proportionally adapted.
<P> (optional)	Position of the bitmap on the line : L for left alignment, R for right alignment, centered by default.

Example:

&FTest.BMP	File "Test.BMP" (in Alert directory) centered on the line with originated size
&FTest.BMP, 20, R	File "Test.BMP" (in Alert directory) right aligned and resized for height of 20 mm
&FC:\Test2.BMP, 0, L	File " C:\Test2.BMP" left aligned with originated size

This bitmap file can be dynamically created by the curve mediator (M_CURVE.DLL) to draw a curve from a set of values contained in a text file of same name and located in the same directory but with an extension ".txt".

The text file contains a line by point of the curve with the format :

<TIME><SEP><VALUE>

with:

<TIME>	recording time of the value (format HH:MM)
<SEP>	separator (tabulation)
<VALUE>	point value
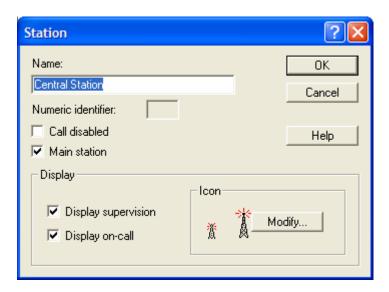
Example:	00:19 56.5

The curve format is configurable in the curve mediator.

5.12 Station properties

This dialog box defines the properties of a station.

It is called from the tree of the main screen (see § 4.6.1.2 "*Station*").

Name

Name of the station. This name is limited to 40 characters and must be unique in the list of stations.

Numeric identifier

The numeric identifier is the code to enter, at the beginning of a telephonic communication, just before the ID code of the operator to identify the station to which the calling or called operator is attached.

This code is only needed on main stations which have set a non null length for the station identifier in the vocal server dialog box (see § 7.7.1 "*Vocal Server options*"). In the opposite case, this field is grayed.

Call disabled

When this option is checked, alarm calls issued from the station are disabled (ca call performed). This state is signalled by a red crossbar on the station icon (✗).

Main station

Type of the station. A main station receives the configurations of the remote stations. During the synchronizations, the exchanged data are the data attached to the remote stations.

This option is displayed only when the **Alert stations** option is checked in the general options (see § 7.1 "*General options*") and only for the local station (first station of the tree in the main screen).

Display

Display options for the remote station in the tree of the main screen.

➢ The "**Display supervision**" option validates the display of the "Supervision" branch in the sub-tree attached to the station.

➢ The "**Display on-call**" option validates the display of the "On-call Management" branch in the sub-tree attached to the station. This choice is only possible on the station of type "Alert station".

Icon

Representation of the station in the supervision tree.

Click on the **Modify...** button to select another representation (small and large icon).

5.13   Data server properties

This dialog box defines the properties of a data server.

It is called from the tree of the main screen (see § 4.6.1.5 "Data servers").

Link failure if tag value is not valid

When the option is activated, a link failure is set on tags with invalid values despite a successful link. (For example: a bad quality in OPC). If default is selected, the option is set by the Alert global option.

Icon
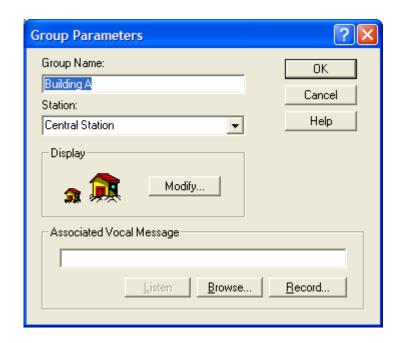
Representation of the data server in the supervision tree.

Click on the **Modify...** button to select another representation (small and large icon).

5.14   Tag group properties

This dialog box defines the properties of a functional group.

It can be called either from the « **Groups** » branch of the supervision tree of the main screen or from any other defined group branch (see § 4.6.1.6 "*Tag groups*"), or from the property dialog box of a tag (see § 5.11 "*Tag properties*").

Group Name

This name identifies the group. It must be unique among the groups of same level (groups having the same parent).

Station

This field displays the name of the station to which it is attached.

Display

Graphical representation of the group in the supervision tree (small and large icon). Click on the **Modify...** button to select another icon.

Associated vocal message

This field defines the name of an audio file containing the voice message associated with the group.

If the typed text is not ended by ".WAV", the text will be automatically synthesized (if the Text To Speech option is active) in order to produce the voice message associated with the group.
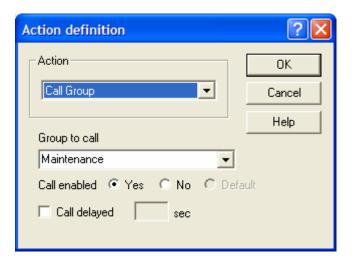
The sound file can be selected among the existing files by clicking on the **Browse...** button or directly recorded by clicking on the **Record...** button.

Click on the **Listen** button to listen to the selected vocal message.

Note: The vocal message associated with the group is used to designate the basic group of an alarm in the vocal alarm messages. It is played before the vocal message associated with the tag in alarm. If there is no vocal message associated with the tag, the identification message of the group is played alone.

5.15   Definition of actions

5.15.1   Call group

The **Call group** action causes the call of the group selected in the **Group to call** dropdown list with option of inhibition or delay.

Note: this action implicitly authorizes the users of the designated group to have access to the tag (consultation, acknowledgment). It is the only way of associating a tag with a group. To authorize a group which should not be called, to have access to the tag, a call action for the group in question must be defined with invalidation of the call.

Group to call

This dropdown list designates the on call group to call. Select this group in the list of the defined groups by clicking on the arrow of the dropdown list.

If the desired group does not exist, type its name in the edit field. An empty group is automatically created. It will be necessary to return later to the group configuration to assign users and organize the teams.

Call enabled

This option can be used to validate or invalidate the call.

The "**Default**" choice is only enabled for calls on reset or acknowledgment. When this choice is done, the call option is given by the corresponding option in the general alarm options.

For the calls on event activation, the call invalidation allows a group to be attached to a tag (for consultation and acknowledgment by the users of the designated group) without having to call the group in question.

Call delayed

This option allows the call to be delayed during the time indicated in the adjacent edit field. It is only available for the events defined as alarms.

If this option is validated, the detected alarm will be processed as others (event log, alarm table…), but the call will be triggered at the end of the time specified in the adjacent field, and only if the alarm is still active at the end of this time. If the alarm is reset before the end of the specified timeout, then it is automatically acknowledged and no call is triggered.

This option allows the filtering of events that are not important when they are temporary (short power fail on an installation protected by a UPS for example).

A) Call on event activation

If the tag is defined as **alarm**, the alarm detection triggers the call of users of the designated group for transmission of the information associated with the alarm (numeric, alphanumeric or vocal message, text file). The call will be reiterated so long that the group will not be considered as warned (messages transmitted and call acknowledged).

If the variable is not defined as alarm (**simple event**), the detection of the event triggers the call of the main users (not relief users) of the active team of the designated group for transmission of the information associated with the event (numeric, alphanumeric or vocal message, text file) under the form of a service message (no call of relief users if failed, no call acknowledgment).

If the variable is defined as **acknowledgment**, the event triggers a call of the users concerned by the acknowledgment of the associated basic alarm group, with transmission of the associated formatted message, independently of the designated on-call group.

Example

format message:	"Acknowledgment of &G alarms by &M"
message:	"Peter HENRY"
associated group:	"Boiler room"
message transmitted:	"Acknowledgment of Boiler room alarms by Peter HENRY"

B) Call on event reset

If the call on reset is validated for an event, only users of the selected on call group having their "call on reset" option validated will be effectively called.

The reset of the event triggers the call of the main users (not relief users) of the active team of the designated group for transmission of the information associated with the event reset (numeric, alphanumeric or vocal message, text file) under the form of a service message (no call of relief users if failed, no call acknowledgment).

If the variable is defined as alarm, the call on reset is done only if at least one call has been triggered after the alarm detection.
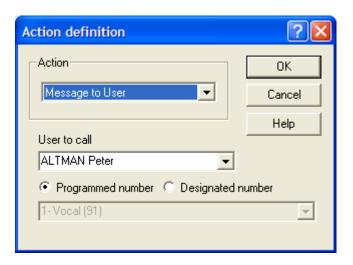
C) Call on alarm acknowledgment

If the call on acknowledgment is validated for an event, only users of the selected on call group having their "call on acknowledgment" option validated will be effectively called.

The acknowledgment of the alarm triggers the call of the main users (not relief users) of the active team of the designated group for transmission of the information associated with the alarm acknowledgment (numeric, alphanumeric or vocal message, text file) under the form of a service message (no call of relief users if failed, no call acknowledgment).

The call on acknowledgment is done only if at least one call has been triggered after the alarm detection.

5.15.2 Message to user

The **Call User** action provokes the call of the user selected in the **User to call** dropdown list with option of forcing the called number.

Note: so that the user can consult the tag or acknowledge the alarm, the tag has to be attached to one of the on call groups which the user belongs, by defining an a "call group" action for the group in question. If the operator does not belong to any the groups to be called, he will not have access to the tag.

User to call

This dropdown list designates the user to call. Select this user in the list of the defined users by clicking on the arrow of the dropdown list.

On event activation (or reset or acknowledgment following the selected tab), the designated user will receive a call of type "service message" with the formatted message which corresponds to the selected tab.
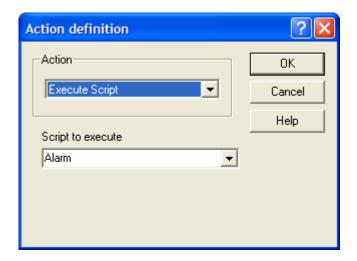
Programmed number

When this option is checked, the call of the user is processed by using the number that is active at the call time, with possible call of the relief number in case of failure.

Designated number

When this option is checked, the call of the user is processed by using the number which is explicitly designated in the list below. In case of failure, there is no possible call of the relief number.

5.15.3   Execute script
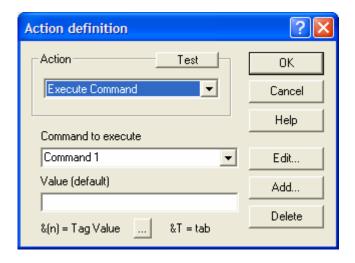
The **Execute script** action executes the message processor script selected in the **Script to execute** dropdown list.

<u>Script to execute</u>

This dropdown list designates the treatment of the Message Processor that will be triggered every time the event is set (or reset or acknowledged following the selected tab). This treatment can be used to parse the event and consecutively activate alarms or to trig actions in response to the event.

Only the Message Processor prototypes that are defined with the "Alarm" interface are proposed in the list. The associated scripts are started at the software launching time and have to block themselves for waiting the event (instruction RECEIVEALARM).

5.15.4   Execute command

The **Execute command** action executes the command selected in the **Command to execute** dropdown list with option of forcing the written value.

<u>Command to execute</u>

This dropdown list designates the command to execute. Select this command in the list of defined commands, by clicking on the arrow of the dropdown list.

Button _Add…_

If the wished command does not exist in the list, click on this button to create a new command and add it to the list (see § 5.16.2 "*Command definition*").

Button _Edit…_

To modify the parameters of the selected command, click on this button (see § 5.16.2 "*Command definition*").

Button _Delete_

Click on this button to delete the selected command.

Button _Test_
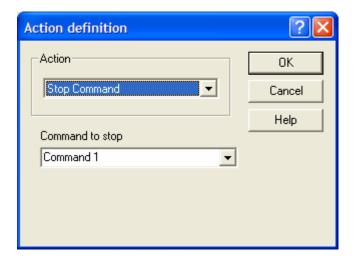
Click on this button to test the selected command.

Value (default)

The value defined in this field is the value which will be transmitted in all the requests of writing which make the command and for which no value is not explicitly defined. This option makes it possible to use generic commands for definition of outputs to control and to parameterize the transmitted value at the time of the action.

The forced value can contain variable fields that will be updated at the time of event activation (or reset or acknowledgment following the selected tab). Click on the button […] to integrate the value of a supervised tag in the default value transmitted by the command. In the displayed dialog box, select the wished tag then validate. The numerical identifier of the tag is inserted in the edit field at the current cursor position, under the form: &(tag id).

5.15.5   Stop command
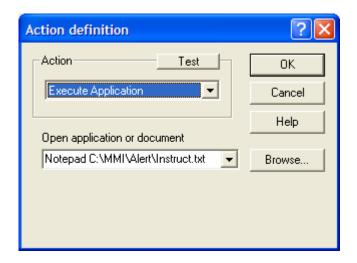
The **Stop command** action stops the execution of the command selected in the **Command to stop** dropdown list.

Command to stop

This dropdown list designates the command to stop. Select this command in the list of defined commands, by clicking on the arrow of the dropdown list.

This action can be use, for example, to abort on event reset or alarm acknowledgment a temporized command that was activated on alarm detection.

5.15.6   Execute application

The **Execute application** action launches the application designated in the **Open application or document** dropdown list.

Open application or document

This dropdown list designates the application to execute or the document to open. Type in this field a command line which designates an application (with its possible parameters) or a document. The application or document must be typed with their full path.
The command lines that have been already defined are registered and can be directly selected by clicking on the arrow of the dropdown list.
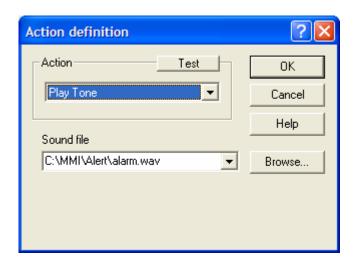
Button *Browse...*

The application or the document can be searched and selected by clicking on this button.

Button *Test*

The defined command line can be executed for test by clicking on this button.

5.15.7   Play Tone

The **Play Tone** action plays the sound file attached to the called group or designated in the **Sound file** dropdown list.

Note: The option **Play group tone** defined on the **Alarms** page of the general options forces the execution of the sound file associated to the on-call group attached to the alarm (or to first of the attached groups) for all the defined alarms, regardless of the **Play Tone** actions possibly defined.

Sound file

This dropdown list designates the sound file to play. Click on the "Browse…" button to search and select a sound file or directly type the name of the wanted file with its full path.
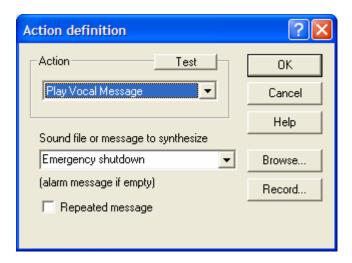
The sound file already selected in actions or associated with the on call groups attached to the tag (groups to be called) can be directly selected by clicking on the arrow of the dropdown list.

Button *Test*

The selected sound file can be played for test by clicking on this button.

The "Play Tone" action plays the sound file attached to the called group or designated in the "Sound file" dropdown list.

5.15.8   Play Vocal Message

The **Play Vocal Message** action plays the vocal message attached to the alarm or designated in the **Sound file or message to synthesize** dropdown list.

Note: The option **Play vocal message** defined on the **Alarms** page of the general options forces the alarm vocal message to be played on the local station for all the defined alarms, regardless of the **Play vocal message** actions possibly defined.

Sound file or message to synthesize

This dropdown list designates the audio file which contains the recorded vocal message (*.WAV format) or, if the typed text is not ended by ".WAV", the text to synthesize to produce the vocal message to play on the local station.

If the field is empty, the played message will be the vocal message defined for the activation, reset or acknowledgment, according to the selected tab.

Repeated message

When this option is checked, the vocal message is repeated until the alarm acknowledgment. This selection is only possible for activation of events defined as alarms.

Button *Browse...*

Click on this button to browse file and select the desired audio file.

Button *Record...*

Click on this button to record the audio file.

Button *Test*

The selected audio file or the synthesized message can be played for test by clicking on this button.
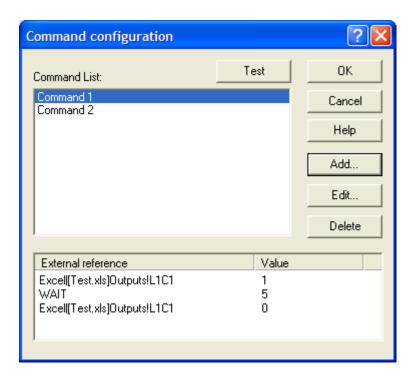
5.16 Commands

The Alert software is capable of initiating commands to write external variables or outputs, in reaction to an event activation or reset or an alarm acknowledgment. A command can be used, for example, to activate a siren or a flashing light, or, during a call cycle, to signal the call procedure failure or to command an external relief call system.

Each command is designated by a name and is made up of a sequence of basic writing commands of external variables (by DDE or OPC) or outputs (through a communication driver), with timer capability. The controlled variables and outputs are designated in the sequence. The value written on each variable or output can be predefined in the sequence and can include the content of supervised tags. A default value can also be redefined when referring to the command in the action list attached to an event. This default value will be applied to every variables and outputs that are not defined in the sequence. It allows the same command to be used to write various values in function of the command origin.

The commands can be defined when configuring an action of type "Execute command" (see § 5.15.4 "*Execute command*"), an on-call group (see § 5.3.1 "*On-call group properties*") or a user call number of type "Command" (see § 5.1.2 "*Dial number definition*"). It also can be defined when configuring the "Command" driver (see § 8.7 "*Command driver*").

5.16.1 Command list

Command List

Display the list of defined commands.

Command description

Sequence of writing commands to external variables or outputs which corresponds to the command selected in the command list.

Button _Test_

Click on this button to execute for test the command selected in the list.

Button _Add..._

Click on this button to create a new command (see below.

Button Edit...
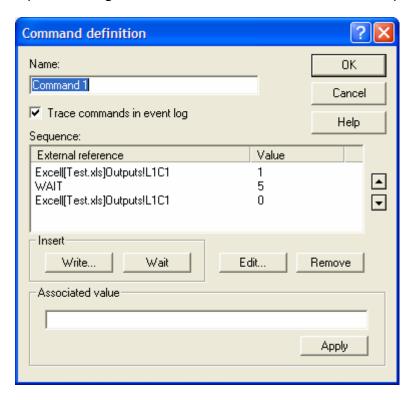
Click on this button to modify the parameters of the command selected in the list (see below).

Button _Delete_

Click on this button to delete the command selected in the list.

5.16.2 Command definition

A command is made up of a sequence of basic writing commands of external variables (by DDE or OPC) or outputs (through a communication driver), with timer capability.

The controlled variables and outputs are designated in the sequence. The value written on each variable or output can be predefined in the sequence and can include the content of supervised tags. A default value can also be redefined when referring to the command in the action list attached to an event. This default value will be applied to every variables and outputs that are not defined in the sequence. It allows the same command to be used to write various values in function of the command origin.

Name

This field designates the command by an explicit name. This name must be unique in the command list.

Trace commands...

When this option is checked, the command execution will be traced in the event log.

Sequence

This list displays the ordered sequence of variables and outputs that will be written during the execution of the command.

Each variable or output is designated by an external reference under the form :

	"server|topic!item"	(DDE reference),
	"server\item"	(OPC reference)
or	"driver##block##output"	(driver reference).

The value to write can be set when defining the command (**Value** column). That value can also be defined later, every time the command is used.

The defined sequence can include timers ("Wait"), with time counted in seconds.

Use the buttons ▲ and ▼ to modify the execution order of the sequence by moving respectively up and down the external reference or the timer selected in the list.

Button *Write...*

Click on this button to add a new variable or output reference to the sequence (see § 5.10 "*Selection of an external tag*"). In the displayed dialog box, select the desired type (DDE, OPC or external) and reference.

Button *Wait*

Click on this button to insert a timer in the sequence. Define the value of the wished time to wait in the field **Associated value** (time in seconds) then validate the typed value by clicking on the **Apply** button.

Button *Edit...*

Click on this button to modify the external reference selected in the list. This action displays the dialog box of selection of an external variable (see § 5.10 "*Selection of an external tag*").

Button *Remove*

Click on this button to remove from the sequence the external reference or timer selected in the list.
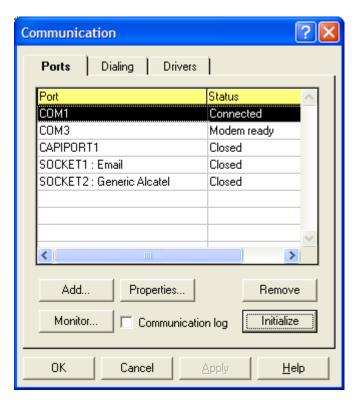
Associated value

When an external reference is selected in the list, this field defines the value to write in the variable or output designated by the selected external reference. This value can be any numerical or alphanumeric string. It can include tab chars, but they have to be coded under the form "&T". If this field is empty, the written value will be the default value which is defined when selecting the command in an action of type "Execute Command". The value to write must be validated by clicking on the **Apply** button.

The value to write can contain variable fields that will be updated at the time of the command execution. To integrate the content of a supervised tag, click on the button ⬚. In the displayed dialog box, select the desired tag then validate. The numerical identifier of the tag is inserted in the edit field at the current cursor position, under the form: &(tag id).

5.17 Communication ports

To configure the communication ports, select the "**Communication...**" command in the "**Configuration**" menu or click on the button 🖭 .

On the displayed dialog box, select the "**Port**" tab.

The list displays the communication ports used by the application.

This list can reference physical COM ports (COM1, COM2, ...), ISDN ports (CAPIPORT1, ...) or modems that have been installed before through the Windows Control Panel. TCP/IP ports (SOCKET1, ...) also can be automatically created by the communication drivers.

To add a physical port, an ISDN port or a modem to the list, click on the **Add** button.

The status displayed for each port is updated in real time. It can be:

➢ **Not used**	The port is not used by application
➢ **Out of order**	The port is used but doesn't function correctly
➢ **Initialization...**	The modem is initializing
➢ **Modem ready**	The modem is ready for incoming or outgoing calls
➢ **Ring...**	The modem processes an incoming call
➢ **Call in progress...**	The modem processes an outgoing call
➢ **Connected**	The connection is established in "data" mode
➢ **Disconnect...**	The connection is breaking
➢ **Fax transmission…**	The modem is transmitting a fax
➢ **Voice communication...**	The connection is established in "voice" mode

The possible actions on this dialog box are the following:

Button Add...

Click on the **Add** button to create a new communication port and add it to the list. This port can be a physical COM port, an ISDN port or a TAPI modem. See § 5.17.1 *"Selection of a communication port"*.

Button Properties...

Click on the **Properties** button to configure the parameters of the selected port (physical COM port, ISDN port or modem). See § 5.17.2 *"Configuration of a modem (TAPI)"*, 5.17.3 *"Configuration of a physical port (COM)"* or 5.17.4 *"Configuration of ISDN controller (CAPI)"*.

Button Remove

Click on the **Remove** button to delete the port selected in the list.

Button Initialize

Click on the **Initialize** button to reinitialize the port selected in the list.
The current status of the port is updated in real time in the list.

Button Monitor...
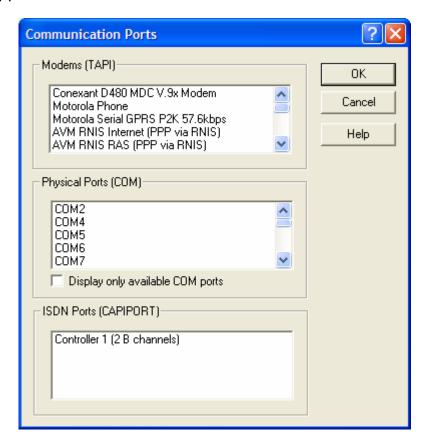
Click on the **Monitor** button to display the line monitor screen for controlling data exchanged on the port selected in the list. See § 7.9 *"Communication log"*.

Communication log option

This option validates the recording of transmitted and received data on the communication port. See § 7.9 *"Communication log"*.

5.17.1   Selection of a communication port

The **Communication ports** dialog box allows the selection of a communication port to add it to the application.

Modems (TAPI)

This list contains the list of modems that have been installed on the PC and that are available. To add a modem to this list, use the "Modem" icon of the Windows Control Panel.

Note : for a better control of the modem, especially in vocal mode, it is often more advisable to not use the TAPI interface and rather to configure the physical COM port it is connected to with the type "modem" (list "Physical Ports").

Physical ports (COM)

This list contains the list of physical ports of the PC.

If the check box "**display only available COM ports**" is not checked, this list contains the ports COM1 to COM64, except those that are already used by the application.

If the check box "**display only available COM ports**" is checked, this list only contains the available ports (hardware detected and not in use).

Option "Display only available COM ports"

When this box is checked, the physical Port list only contains the available ports (hardware detected on the PC and not used by another application).
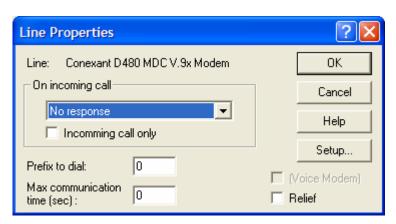
The polling of available ports being capable to disturb communications already established by other applications (using drivers no compatible Windows), this choice must be done on good grounds.

ISDN Ports (CAPIPORT)

This list displays the ISDN controllers installed on the PC and compatible with the CAPI 2 interface.

5.17.2 Configuration of a modem (TAPI)

This dialog box defines the working parameters of the selected TAPI modem.

The following parameters can be configured:

On incoming call

This drop down list selects the treatment to perform on reception of an incoming call:

➢ **No response**   no answer to the call.

➢ **Voice response**   voice answer (utilization of the voice driver), validated only when the modem driver accepts voice commands.

➢ **Telematic server**   answer to a remote terminal, by using the **Visual Access** application (terminal server).

When the message processor is active, the treatments that have been defined for a serial link can also be selected.

Option Incoming call only

When this option is checked, the modem is exclusively reserved for incoming calls and cannot be used for outgoing calls.

Prefix to dial

Prefix to dial to have access to the public telephone network on the line connected to the controller.

The "-" prefix indicates that the line is exclusively reserved for internal calls (no access to the public telephone network).

Max. communication time

This time defines the maximum duration of a communication in seconds. After this time, the modem is automatically disconnected.

If this time is set to 0, there is no limit for the communication time.

Voice modem

When this option is checked, the modem can be used for vocal communications.

This option depends on the installed driver at the level of the Windows Control Panel.

Relief

When this option is checked, the modem will be only used in relief mode, when none of the main communication ports (not defined as relief) can be used (ports in failure).

This option allows a relief calling device to be used in case of problem with the usual calling systems.
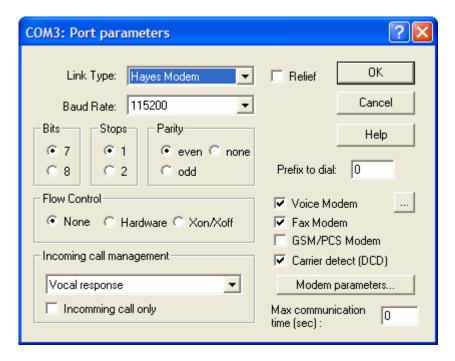
Button Setup...

Click on this button to configure the general parameters of the modem.
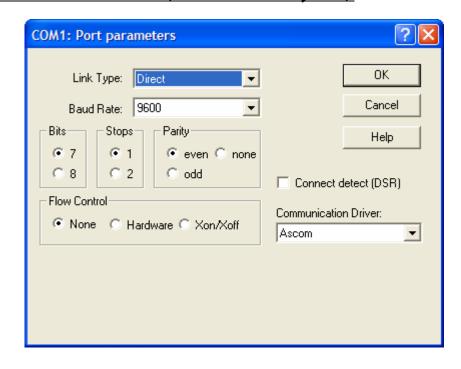
5.17.3   Configuration of a physical port (COM)

This dialog box defines the working parameters of the selected communication port when it is connected to a modem or to an external system.

Port defined as modem connection:

Port defined as direct connection (with an external system):

The following parameters can be configured:

Type

Type of the connection on the port:
- ➢ **Direct**   Direct connection with an external call system
- ➢ **Hayes Modem**   Connection through a Hayes modem

Relief

When this option is checked, the modem will be only used in relief mode, when none of the main communication ports (not defined as relief) can be used (ports in failure).

This option allows a relief calling device to be used in case of problem with the usual calling systems.

Baud

Default baud rate.

This value can be automatically changed by the driver using the port during an outgoing call.

Bits

Number of bits by transmitted character.

This value can be automatically changed by the driver using the port during an outgoing call.

Stops

Number of stop bits transmitted at the end of each character.

This value can be automatically changed by the driver using the port during an outgoing call.

Parity

Type of parity.

This value can be automatically changed by the driver using the port during an outgoing call.

Flow control

Type of flow control.

The **Hardware** choice corresponds to a flow control by the RTS/CTS signals of the V24 junction.

The **Xon/Xoff** choice corresponds to a software flow control by sending the **Xoff** code (13h) to request the emitter to suspend the data transmission, and the **Xon** code (11h) to request for the resumption.

This value can be automatically changed by the driver using the port during an outgoing call.

Incoming call management

This drop down list selects the treatment to perform on reception of an incoming call:
- ➢ **No response**   no answer to the call.
- ➢ **Voice response**   voice answer (utilization of the voice driver), validated only when the modem driver accepts voice commands.
- ➢ **Telematic server**   answer to a remote terminal, by using the **Visual Access** application (terminal server).

When the message processor is active, the treatments that have been defined for a serial link can also be selected.

Option Incoming call only

When this option is checked, the modem is exclusively reserved for incoming calls and cannot be used for outgoing calls.

Prefix to dial

Prefix to dial to have access to the public telephone network on the line connected to the modem.

The "**-**" prefix indicates that the line is exclusively reserved for internal calls (no access to the public telephone network).

Voice modem

When this option is checked, the modem can be used for vocal communications.

A button [...] is then displayed on the right to give access to the configuration of specific parameters of the voice modem (see § 5.17.3.2 *"Configuration of vocal modem parameters"*).

Fax modem

When this option is checked, the modem can be used to transmit faxes.

GSM / PCS modem

Check this option when the connected modem is a GSM or PCS modem.

A button [...] is then displayed on the right to give access to the configuration of specific parameters of the GSM/PCS modem (see § 5.17.3.3 *"Configuration of GSM/PCS modem parameters"*).

Carrier detect (DCD)

Validation of the processing of the carrier detection signal (DCD) of the V24 junction to automatically release the line when this signal falls down.

Button Modem parameters...

Click on this button to have access to the configuration of specific parameters of the modem (see § 5.17.3.1 *"Configuration of modem parameters"*).

Maximum communication time

This time defines the maximum duration of a communication in seconds. After this time, the modem is automatically disconnected.

If this time is set to 0, there is no limit for the communication time.

Connect detect (DSR)

Validation of the processing of the DSR signal of the V24 junction as an active connection indicator of an external messaging system.

Communication driver
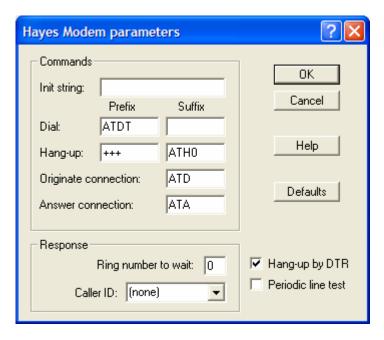
Selection of the communication driver used on the connection.

This drop down list selects the communication driver that will process the data exchanges on the concerned port..

When the message processor is active, the treatments that have been defined for a serial link can also be selected.

5.17.3.1 Configuration of modem parameters

This dialog box defines the specific properties of the connected modem.

The following parameters can be configured:

Init string

String transmitted to the modem when the interface is initialized or reinitialized (switch of vocal mode to terminal mode).

Dial

➤ **Prefix:**   sent before the call number
➤ **Suffix:**   sent after the call number

Hang-up

➤ **Prefix**:   attention sequence to signal a modem command during a communication
➤ **Suffix**:   disconnection command

Originate connection

Connection command sent to the modem during a manual call.

Answer connection

Connection command sent to the modem during a manual answer.

Ring number to wait

Number of rings waited before answering to an incoming call.

The type of answer depends on the selection **On incoming call** done in the dialog box of port configuration.

Caller ID

This selection allows a protocol to be validated for identifying the caller dial number during incoming calls. The following protocols can be selected:

➤ **Formatted ID**   analog voice modem with caller identification
➤ **Unformatted ID**   analog voice modem with caller identification

➢ **Register S190**   ISDN modem, caller id stored in the modem register S190

Hang-up by DTR

Validation of the treatment of the DTR signal of the V24 junction as a hang up modem command.

Periodic line test

Validation of the periodic test of the telephonic line. Validation of the treatment of the DTR signal of the V24 junction as a hang up modem command. This test is periodically performed in accordance with the cycle defined in the general dialing parameters.
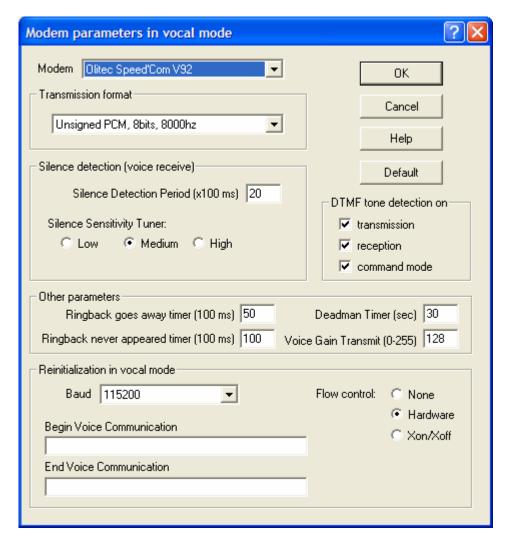
This test is performed by using the Hayes command "ATD;". It should be noted that this command is not available with all modems.

Default button

This button restore the initial standard parameters.

➢ **Register S190**   ISDN modem, caller id stored in the modem register S190

Hang-up by DTR

Validation of the treatment of the DTR signal of the V24 junction as a hang up modem command.

5.17.3.2   Configuration of vocal modem parameters

This dialog box defines the specific properties of the voice modem used.

The following parameters can be configured:

Modem

This list selects the type of vocal modem being used. The proposed modems are those that are designed in the file "modem.lst".

Transmission format

Selection of the transmission format to use to play or record the voice messages. The proposed formats are those that are described in the file "modem.lst" for the selected voice modem.

Silence Detection Period

Maximum elapsed time without receiving any ADPCM data in voice receive mode.

Silence Sensitivity Tuner

Selects the silence sensitivity tuner in voice receive mode.

DTMF tone detection

Validation of detection of DTMF tone:
➢ **Transmission**   during voice message transmission

➢ **Reception**   during voice message recording

➢ **Command mode**   in command mode (neither transmission, neither reception).

Ringback goes away timer

Time between the moment where the ringback cadence stops once detected and the moment where the modem assumes that the remote station has gone off-hook.

By default this time is 7 seconds (70). It is possible to reduce it in order to minimize the time waited for the welcome message when an operator is called, but with the risk to detect false line pick-ups.

Ringback never appeared timer

Time the modem will spend looking for an initial ringback. If ringback is not detected within this interval, the modem will assume that the remote station has gone off-hook.

By default this time is 10 seconds (100). It is possible to reduce it in order to minimize the time waited for the welcome message when an operator is called, but with the risk to detect false line pick-ups.

Deadman Timer

Period of time (in seconds) which if expired causes the modem to hang up the telephone line if no data has passed during the period.

Voice Gain Transmit

Gain to apply during the transmission of a voice message. The value 255 corresponds to the maximum gain.

This parameter is only valid for some voice modems.

Baud

Baud rate used with the modem during voice communications.

Flow control

Flow control used on the modem connection.

➢ **None**   flow control is not used.

➢ **Hardware**   flow control by RTS/CTS.

➢ **Xon/Xoff**   flow control by characters DC1 (11h) et DC3 (13h).

Begin Voice Communication

String of characters transmitted to the modem before the establishment of a voice communication.

End Voice Communication
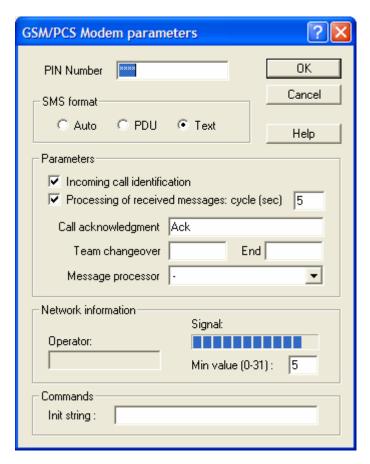
String of characters transmitted to the modem at end of voice communication.

Default button

Click on this button to reinitialize the default values for the selected voice modem.

5.17.3.3   Configuration of GSM/PCS modem parameters

This dialog box defines the specific properties of the GSM modem used as well as its operating mode.

The following parameters can be configured:

PIN Number

Personal Identification Number that authorizes access to the functions of the connected GSM modem.

SMS format

Select here the format to use in the commands to transmit or read short messages (SMS). The "Auto" selection allows the actual format configured in the modem to be used.

Incoming call identification

When this option is validated, the incoming calls on the GSM modems are identified.

Processing of received messages

When this option is validated, the messages received by the GSM modem can be processed as:

➢ a **call acknowledgment** (following the message defined in the field "Call acknowledgment"),

➢ a **team changeover** command (begin or end of on-call period, following the messages defined in the field "Team changeover").

➢ **alarm or acknowledgment messages** that will be treated by the message processor according with the treatment selected in the "Message processor" list.

Received messages can be automatically transmitted by the GSM modem. However, some modems only transmit received messages on request. For these modems, it will be necessary to define a polling period in the field *cycle*. The value 0 disables the polling cycle of the modem.

Call acknowledgment

Short message text that will be interpreted as an acknowledgment of the calls that was destined to the operator who has transmitted the short message.

Team changeover

Short message text that will be interpreted as the beginning (first field) or the end (second field) of the on-call period of the operator who has transmitted the short message.

Message processor

Select here the treatment to perform on the messages received by the GSM modem. The treatments that can be selected in the list are those that have been defined in the message processor with the type "Short Messages (SMS)". This selection is only enabled when the option "reception of SMS messages" has been validated at the software installation.

Operator

When the GSM modem is properly initialized, this field indicates the name of the operator which is selected by the device.

Signal

Indicator of the level of the signal received from the selected GSM operator. This level can vary between 0 and 31.

Min value
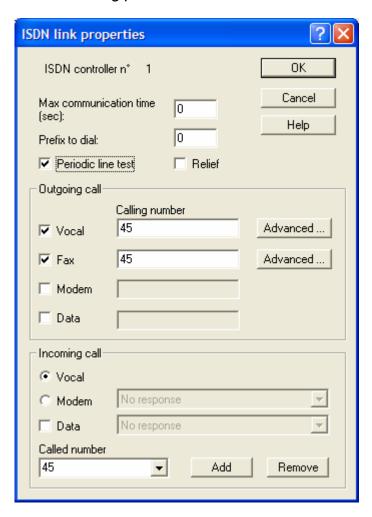
Minimum threshold of the signal reception level. When the reception level is lower or same than this threshold, the modem is declared in "line" failure (idem no dial tone on a telephone line).

Init string

Initialization string sent to the GSM modem at initialization time.

5.17.4 Configuration of ISDN controller (CAPI)

This dialog box defines the working parameters of the selected ISDN controller.

The following parameters can be configured:

Max. communication time

This time defines the maximum duration of a communication in seconds. After this time, the modem is automatically disconnected.
If this time is set to 0, there is no limit for the communication time.

Prefix to dial

Prefix to dial to have access to the public telephone network on the line connected to the controller.

The "-" prefix indicates that the line is exclusively reserved for internal calls (no access to the public telephone network).

Periodic line test

Validation of the periodic test of the telephonic line. This test is periodically performed in accordance with the cycle defined in the general dialing parameters.

Relief

When this option is checked, the modem will be only used in relief mode, when none of the main communication ports (not defined as relief) can be used (ports in failure).

This option allows a relief calling device to be used in case of problem with the usual calling systems.

Controller configuration for outgoing calls

When the **Vocal** option is checked, the controller can be used to transmit vocal calls. The associated **Advanced...** button allows advanced parameters to be defined for the vocal communications.

When the **Fax** option is checked, the controller can be used to transmit fax calls. The associated **Advanced...** button allows advanced parameters to be defined for the fax communications.

When the **Modem** option is checked, the controller can be used to transmit calls to destination of analog modems.

When the **Data** option is checked, the controller can be used to transmit calls in data mode to destination of ISDN controllers.

The calling number associated with each selection is the dial number that will be transmitted as calling number to the receiver. With some installations that number must be specified in order to have the call accepted.

Controller configuration for incoming calls

When the **Vocal** option is checked, the controller can be used to receive vocal calls.

When the **Modem** option is checked, the controller can be used to receive calls from analog modems.

When the **Data** option is checked, the controller can be used to receive calls in data mode from ISDN controllers.

The treatment to perform on reception of a call of type **modem** or **data** must be selected in the dropdown list associated with each type. The proposed treatments are:

➢ **Telematic server**   answer to a remote terminal, by using the **Visual Access** application (terminal server).

➢ **Alert modem**   answer performed by the Alert modem driver for data exchange with a remote station.

When the message processor is active, the treatments that have been defined for a serial link can also be selected.

Called number

List of the numbers accepted by the controller on reception of an incoming call. It is possible to define several numbers by designating for each number the required response mode (vocal, modem or data).

To add a number to the list, type the number in the edit field, select the wanted response mode then click on the **Add** button.

To modify the response mode that is associated with a number, select it in the dropdown list, define the wanted response mode then click on the **Add** button.

To remove a number from the list, select it in the dropdown list then click on the **Remove** button.

5.17.4.1 Advanced properties of an ISDN port

This dialog box defines the Compatibility Information Profile (CIP) for vocal and fax ISDN communications and the parameters for detections of DTMF tones.
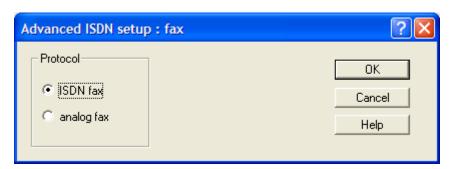
The selected profile predefines some standard parameters (bearer capability, low layer compatibility, high layer compatibility). The profile to select depends on the used ISDN connection.

Vocal communications

- **Telephony** (default profile): CIP code = 16 (coding CCITT, speech transfer mode, circuit mode, 64kbits/s, G.711 protocol, high layer compatibility CCITT with identification of type telephony)

- **Vocal**: CIP code = 1 (coding CCITT, speech transfer mode, circuit mode, 64kbits/s, G.711 protocol)

- **Audio 3.1 kHz**: CIP code = 4 (coding CCITT, transfer mode 3.1 kHz audio, circuit mode, 64kbits/s, G.711 protocol)

Fax communications
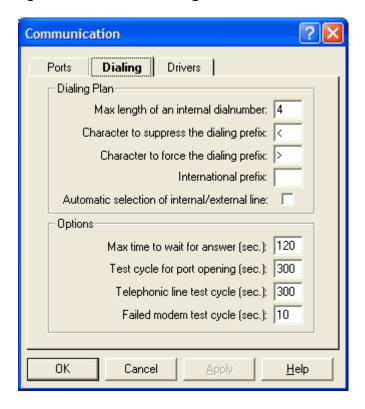
- **ISDN Fax** (default profile): CIP code = 17 (coding CCITT, transfer mode 3.1 kHz audio, circuit mode, 64kbits/s, G.711 protocol, high layer compatibility CCITT with identification of type Group 2/3 facsimile)

- **Analog fax**: CIP code = 4 (coding CCITT, transfer mode 3.1 kHz audio, circuit mode, 64kbits/s, G.711 protocol)

DTMF detection

- **Duration**: minimal duration of a DTMF tone (default = 100 ms).

- **Gap**: minimal time between 2 DTMF tones (default = 40 ms).

5.18   Dialing parameters

To configure the dialing parameters, select the "**Communication...**" command in the "**Configuration**" menu or click on the button ⌨.

On the displayed dialog box, select the "**Dialing**" tab.

The configurable dialing parameters are:

<u>Max length on internal dial number</u>

When a dial prefix is defined for a communication port, this prefix will be automatically added at head of the dial numbers having a length greater than the size defined here.

<u>Character to suppress the dialing prefix</u>

The character defined here can be added at head of a dial number to notify that this number is an internal dial number and the dial prefix defined for the used line have not to be added. This character will be never dialed.

<u>Character to force the dialing prefix</u>

The character defined here can be added at head of a dial number to notify that this number is an external dial number and the dial prefix defined for the used line have to be added. This character will be never dialed.

<u>International prefix</u>

The international prefix of the country where is installed the software can be defined in this field. It authorizes the definition of the telephonic numbers used by the application with the following format:

+<international prefix>(<telephone provider prefix>)<number>

That numbers can be exchanged between stations located in different countries. The international prefix of the station that dials the number is compared with the number international prefix to determine the format of the number that is really dialed.

For example, if the number to dial is defined by +33(0)476041100, the dialed number will be 0476041100 if the defined international prefix is 33, or +33476041100 if the defined international prefix is not 33.

Automatic selection of internal/external line

When this option is checked, the port to use to transmit a call will be select according to the internal / external type of the dial number, in accordance with the defined dialling rulers (max length of internal number, forcing or suppression of prefix).

If the number to call is an **internal number**, only the lines defined as internal (dial prefix defined for the associated communication port) will be used.

If the number to call is an **external number**, all the lines can be used, except those that have been specified as exclusively internal (dial prefix "**-**").

Max time to wait to answer

Maximal time to wait for answer after dialing. After this time without answer, the call is considered as failed (no answer).

Test cycle for port opening

When this value is non null, the ports that cannot be open by the software (used by another application, remote control application for example) are periodically checked following the defined cycle.

Telephone line test cycle
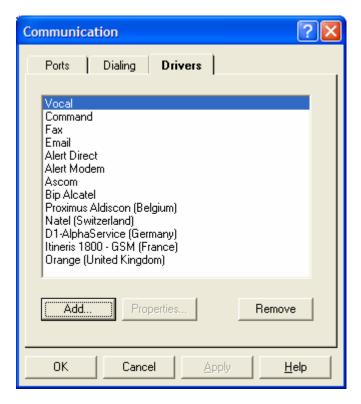
When this value is non null, the modems for which the line test has been validated are periodically checked for line test following the defined cycle.

Failed modem test cycle

When this value is non null, the modems considered as in fail state are periodically checked following the defined cycle.

5.19 Communication drivers

To configure the communication drivers, select the "**Communication...**" command in the "**Configuration**" menu or click on the button ⬚.

On the displayed dialog box, select the "**Driver**" tab.

The displayed list defines the list of communication drivers that will be proposed when defining a dial number.

The possible actions on this dialog box are:

Button *Add...*

Click on this button to add one or several new driver(s) to the list of used drivers.

Button *Properties...*

Click on this button to configure the communication driver selected in the list.

Button *Remove*
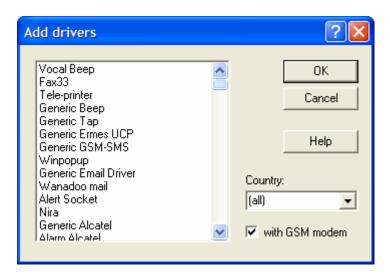
Click on this button to remove the driver(s) selected in the list. These drivers will no more be proposed when defining a dial number.

This dialog box displays the list of installed communication drivers.

5.19.1 Adding a driver

This dialog box allows the selection of one or several communication drivers to add them to the list of used drivers.

The list displays the drivers that have been installed but that are not used. Select in this list the driver(s) that you wish to add then click on the *OK* button.

The following options allow the list of proposed drivers to be reduced:

- **Country**

  When the **(all)** entry is selected, all the unused installed drivers are displayed in the list.

  When a specific country is selected, only the drivers concerning that country and those that do not depend on a country are displayed.

- **With GSM modem**

  When this option is selected, the drivers that use a GSM modem are included in the list.
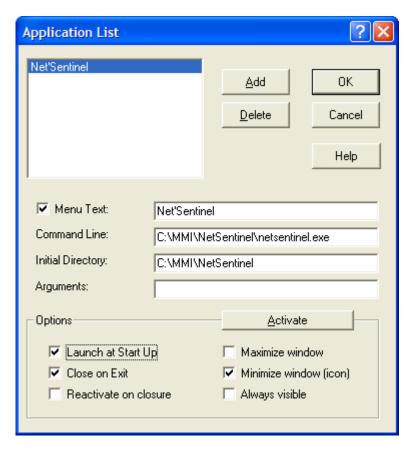
The "**Command**" driver is a generic driver which allows commands to be transmitted to an external application during a call cycle. See § 8.7 "*Command driver*".

Consult the corresponding rubrics for the drivers "**Email**" (§ 8.10), "**Beep**" (§ 8.8), "**Fax**" (§ 8.9) and "**Alert**" (§ 8.11).

For the other drivers (SMS, public paging systems, in site paging systems, teleprinter, etc) consult the on line help associated with the driver for more information.

5.20   External applications

The "**Applications**" command of the "**Configuration**" menu allows to define the list of external applications associated with **Alert**. These applications can be launched directly from the "Operation" menu of **Alert** or automatically at initialization. They can be applications to supervise or complementary applications.

List of defined applications

The list on the top left of the dialog box displays the list of external applications associated with ALERT.

Click on the **Add** button to add an application to the list by browsing files for the wanted application.

Click on the **Delete** button to remove an application from the list.

Option *Menu Text*

This option validates the insertion of the selected application in the *Operation* menu. The text that is displayed in the menu is the one entered in the associated edit field.

When this option is validated, the selection of the corresponding menu command will activate the application or place it to the foreground if it was already active.

Command Line

This is the **command line** that will be used to launch the application. This line must contain the full path of the application if its directory is not in the default path.

Initial Directory

The **initial directory** is that to use by the selected application.

Arguments

The **arguments** are optional: it could be the name of a document (Excel sheet …) to be opened by the application.

Option *Launch at Start Up*

This option causes the automatic activation of the selected application at ALERT start-up.

Option *Close on Exit*

This option causes the automatic closure of the selected application at ALERT closure.

Option *Reactivate on closure*

This option provokes the automatic reactivation of the associated application when this last is stopped, with reinitialization of the connections with this application at the end of the initial timeout defined in the supervision options.

Option *Maximize window*

This option indicates that the selected application must be launched in full screen.

Option *Minimize window (icon)*

This option indicates that the selected application must be launched as icon.

Option *Always visible*

This option indicates that the selected application must be placed above all non-topmost windows (application stays always visible). This option is validated (or invalidated) for the application in question as soon as the ***Activate*** button is clicked, whether this application is already active or not.
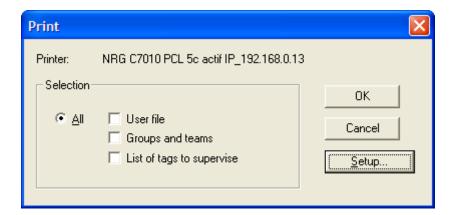
Button *Activate*

Click on this button to activate the application selected in the list with the configured options. If the application in question was already active, its window is set to foreground. If the application window was minimized, it is restored to its original size and position.

5.21   Printing configuration

The "**Print…**" command of the "**File**" allows printing of the configuration tables.

A dialog box is displayed to select the tables to print

Click on the **Setup…** button to select and configure the printer.

5.22 Saving / Restoring configuration

5.22.1 Saving a configuration

The **Save As...** command of the **File** menu is used to save the whole configuration in a subdirectory of the basic directory.

Configuration name

In order to save the current configuration, type a name in the edit field above the list (32 characters maximum) or select an existing name in the list (to replace a saved configuration).

If the name did not exist, a subdirectory is created with this name in the selected basic directory.

Selection

When saving a configuration one can include or exclude some parts of the configuration and recorded operational data:

➢ **Audio / instruction files**   Wave files and text files attached to the tags of the supervision list.

➢ **Alarm history**   Save the alarm history.

➢ **Event log**   Save the event logs.

➢ **Report log**   Save reports recorded in the logbook.

Main path
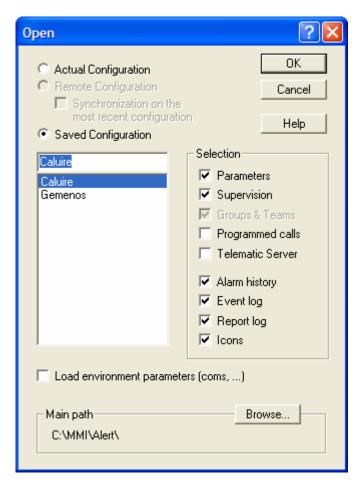
Name of the basic directory in which the configurations will be saved. By default, it is the basic directory of the **Alert** application. This directory can be chosen on a computer of the network.

Click on the **Browse...** button to select another basic directory.

The default base directory is the directory where is installed the **Alert** application. It can be changed by cliquing on the "**Browse...**" button in the open and save dialog boxes. That directory can be choused on a network PC.

5.22.2   Restoring a configuration

The **Open...** command of the **File** menu restores a configuration.

Configuration to restore

One can restore:

- The **actual configuration**, to reinitialize for example the list of the supervised tags when the configuration file of the supervision (taglist.xml) has been modified by an external application,

- The **remote configuration** (only in redundant mode) to reinitialize the configuration from the redundant station,

  Select the option **Synchronization on the most recent configuration** to only retrieve the data that are more recent on the redundant station. In the opposite case, the whole of the selected parameters will be copied from the redundant station.

- A **saved configuration**, by selecting the configuration to restore in the list below. It is possible to restore a saved configuration from a directory different from the Alert directory by changing the basic directory.

Selection

The restoration can be partial by selecting some of the following subsets:

➢ **Parameters**	Parameters of the application. The environment parameters and the configuration files (".ini") of the selected mediator and used communication drivers are restored only when the option **load environment parameters...** is selected.
➢ **Supervision**	Configuration files of the supervision (taglist.xml, taggrouplist.xml) and the text and audio messages associated with.
➢ **Groups & Teams**	Configuration file of the on call management (userlist.xml, grouplist.xml, teamlist.xml, holiday.xml), group schedules (groupschedxxx.xml). Option forced with the "Supervision" option.
➢ **Programmed calls**	Configuration file of programmed calls and synchronization calls with the remote stations (progcalllist.xml).
➢ **Telematic server**	Configuration file of the server application (Alertpro.ini).
➢ **Alarm history**	Restore all the alarm history.
➢ **Event log**	Restore the event logs.
➢ **Report log**	Reports recorded in the logbook.
➢ **Icons**	Icons defined in the tree of the main screen.

Load environment parameters

This option allows the restoration of the application parameters to be limited to the parameters independent of the environment.

When this option is not checked, the following parameters are not restored:

➢ selection and configuration of communication ports.

➢ communication drivers

➢ Windows control (general options)

➢ redundancy parameters (general options)

➢ selected mediator (general options)

➢ DDE trace (DDE options)

➢ external applications

➢ activation of voice synthesis

Load message processor configuration

Check this option to load the configuration of the message processor of the redundant station (parameters and scripts). This option is displayed only for the restoration of a remote configuration.

Main path

Name of the basic directory in which the configurations will be saved. By default, it is the basic directory of the **Alert** application. This directory can be chosen on a computer of the network.

Click on the **Browse...** button to select another basic directory.

5.22.3   New configuration

The **New...** command of the **File** menu reinitializes the current configuration (configuration files of supervision and on call management are cleared), the current environment parameters being unchanged.

Reset of

Select the options corresponding to the subsets to reinitialize:

- ➢ **Supervision**   Erase the list of supervised tags.
- ➢ **Groups & Teams**   Reset the on-call organization (users, groups and teams)
- ➢ **Programmed calls**   Reinitialize the configuration of programmed calls and synchronization calls with the remote stations.
- ➢ **Alarm history**   Erase all the alarm history.
- ➢ **Event log**   Erase the event logs.
- ➢ **Report log**   Remove the reports recorded in the logbook.
- ➢ **Parameters**   Reinitialize the general parameters of the application.
- ➢ **Communication ports**   Reset the configuration of used communication ports.
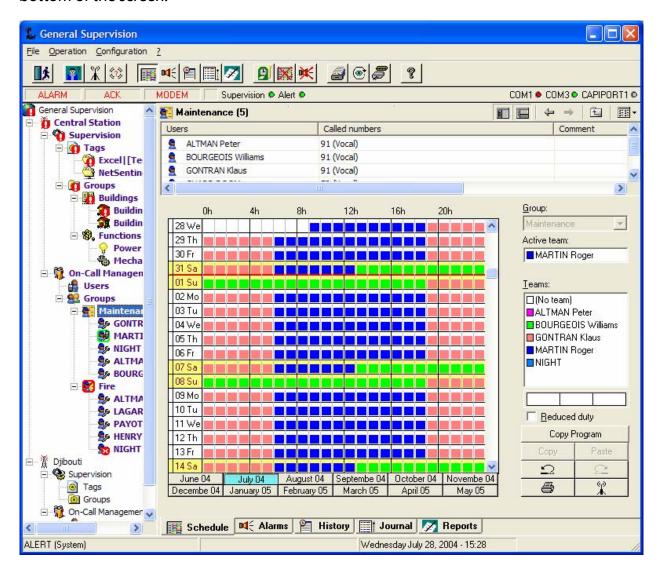
The unselected subsets will remain in the state of the current configuration.

6   OPERATION

6.1   On-call schedule

To display and update the on call schedule, select the "**Schedule**" command in the "**Operation**" menu or just click on the button [icon].

On the main screen, to access to the on-call schedule, select the **Schedule** tab on the bottom of the screen.

6.1.1 Visualization

This screen displays the schedule of teams to call for a group on a period of 12 months from the previous month of the current month.

The selected group is the group displayed at the top right of the screen. To select another group, click on the arrow of the **Groups** control, and then select the wanted group in the dropdown list. This field is grayed when the group is selected in the tree of the main screen.

Teams to call are represented by color strips. To identify the represented teams, use the "color legend" represented by the team list of the selected group, on the right of the screen. One can also visualize and modify the content of a team by double-clicking in the list on the team in question.

The visible part of the timetable corresponds to days displayed on the left of the screen, for the month selected in the panel of buttons located below. The selected month always corresponds to the 1st day displayed in the schedule.

Days of the week are represented with a white ground color. Days of the weekend (Saturday and Sunday) are represented with a yellow ground color. The holiday days are represented with a beige ground color. The holiday days marked with a cross in the column on the left are fixed holiday days, independent of the year. Months are separated by a red line.

The schedule table can be scrolled from the 1st day of the month preceding the current month to the last day of the 10th month following the current month by using the scroll bar on the right of the table: day by day by clicking on the up or down arrows, week by week by clicking above or below the scroll bar button, or by block by dragging this button.

By clicking on a "month" button, one directly reaches the schedule for the month in question, from the 1st day of the selected month.

6.1.2 Active team

The field **Active team** displays the name of the team which is actually on duty (team called in case of alarm concerning the group). This team can be the scheduled team, a forced team (group in derogation), or a team having processed to a team changeover in advance. If this field is marked "No team", there is no active team for the group.

Following the status of the team changeover, a further indication can be displayed below this field:

- ➢ **Changeover done**   The scheduled team has changed over (team in advance).
- ➢ **Changeover waited (n)**   Waiting for team changeover (the team is late or duty ended in mandatory team changeover mode). The value that can be displayed in brackets (n) indicates the remaining time (in minutes) before timeout expired.
- ➢ **Changeover timeout**   The timeout for waiting the team changeover is expired.
- ➢ **Duty ended**   The duty is ended (before the programmed time, except in mandatory team changeover mode).

6.1.3 Definition of holiday days

The left column of the table allows the public holidays of the current year to be defined.

To define a day of the displayed schedule table like holiday, click once in the first column of the wanted day. The day is refreshed with a beige ground color. This day is defined like holiday for the current year. It will be automatically redefined like normal day for the following year.

A second click in this column on the same line displays a cross (X). It means that the day is defined like holiday independent of the year (December 25 for example). This day will remain registered like holiday for the following years.

A new click in this column suppresses the definition of holiday for the day in question (white or yellow ground color).

Note: the public holidays defined in the schedule table of a group apply to all groups.

6.1.4   Copy of the on-call program

To reinitialize the schedule table from the weekly on-call program which is defined for the selected group, click on the **Copy Program** button. The copy is performed from the current day and hour for the next eleven months.

The **Copy Program** button is validated only when a program is defined for the selected group.

6.1.5   Modification of the schedule

To position an on-call team on the timetable:

a) Select a team in the list of teams of the group with one of the mouse buttons. The color of team selected for the mouse button in question appears in one of the 3 representative windows of mouse buttons, located under the list of teams.

b) If one wishes to define a reduced duty period for the selected team, check the **Reduced duty** option. During reduced duty periods, the team is only called for the alarms having a priority level higher than or equal to the minimal level defined in alarm options (see § 7.4 "*Alarm options*").

c) Bring the mouse pointer on the timetable, on the cell corresponding at the 1st hour of the 1st day of wanted time area, then press the button corresponding to the team in question. Drag the mouse pointer, keeping the button pressed, to the cell corresponding to the last hour of the last day of the chosen time area. So release the button. The defined time area becomes colored with the color of the selected team. If the **Reduced duty** option was selected, each hourly pavement contains an "x".

Note 1: **it is not possible to modify the schedule for a past period**; if the defined time area overlaps an area belonging to the past, just the part corresponding to the future (from the current hour) will be taken into account.

Note 2: if the time area to define is not rectangular, you should proceed in many times, for each of the rectangular part of the area.

To erase a time area of the timetable, redo the same operation, but with a button having no selection (select "No team" if necessary).

6.1.6   Duplication of schedule area

To duplicate groups of days of the schedule table (weeks, fortnight...):

a) Select first the area to copy. To do that, click in the day column of the table, on the 1st wished day and drag the mouse cursor until the last day of the wanted selection,

keeping the button pressed. The selection is displayed in reverse video. The **Copy** button (on bottom right of the screen) is validated.

b)   Click on the **Copy** button. The **Paste** button becomes valid.

c)   Select, in the day column of the table, the 1st day of the recipient area by clicking over. The selected day is displayed in reverse video.

d)   Click on the **Paste** button. The previously copied selection is reproduced.

The operations c) and d) can then be reproduced again, the copied selection being always valid.

Note: it is not possible to modify the schedule for a past period; if the selected period overlaps an area belonging to the past, just the part corresponding to the future (from the current hour) will be modified.

6.1.7   Cancellation of the performed operations

Click on the button [⟲] to undo the operations performed on the schedule table (team assignment or deletion, duplication, program copy). Each time this button is clicked, the preceding operation is canceled. It is possible to undo up to the 10 last performed operations. This button is validated only if there is at least one operation to undo.

Click on the button [⟳] to come back on the cancellation done. It is validated only if at least one undo operation has been performed.

6.1.8   Printing the schedule

To print the monthly schedule table of the selected group, choose the desired month and click on the button [🖶], at the bottom right of the windows.

The printer which will be used is the printer selected by the **Print setup...** command of the **File** menu. If no setup has been performed, it is the default printer.

6.1.9   Calling the on call team
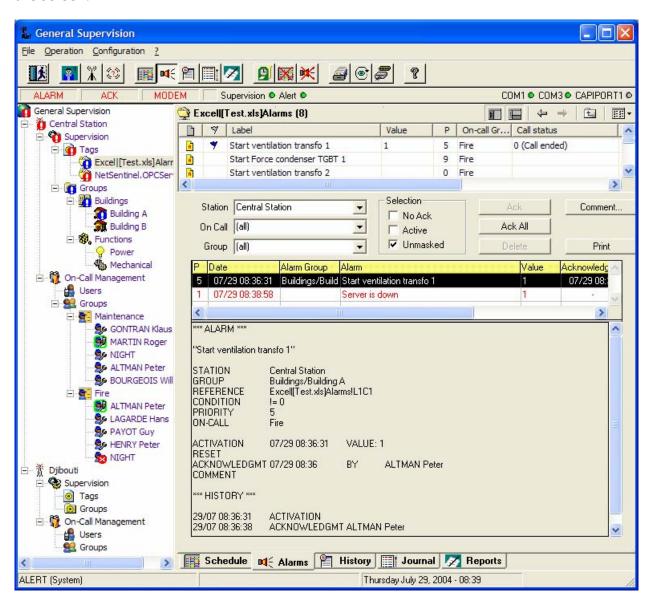
Click on the button [📡] to directly call the operators of the team which is currently on duty and to transmit them a service message.

This action displays the call dialog box (see § 6.9 "*Sending a message*"), with a list of addressees preset with the operators of the current team.

6.2 Alarm table

To display the alarm table, select the "**Alarms**" command in the "**Operation**" menu or just click on the button ◻◁ .

On the main screen, to access to the alarm table, select the **Alarms** tab on the bottom of the screen.

The alarm table displays the time stamped list of all alarms that have been detected, that they are active or inactive, acknowledged or not.

An alarm remains in the alarm table as long as it is not removed by an operator's explicit command, or, if the option **Automatic deletion of inactive and acknowledged alarms** is validated in alarm options(see § 7.4 "*Alarm options*"), until it is simultaneously inactive and acknowledged.

The displayed list represents the content of the alarm table, according to the station/group selection and the selected filter of alarm status.
By default, the masked alarms are not displayed in the table.

This list contains 8 columns by default:

P	*Priority level of the alarm.*
Date	*Alarm time.*
Station	*Name of the station attached to the alarm.*
Alarm Group	*Basic tag group of the alarm.*
Alarm	*Formatted message defined for the alarm.*
Value	*Current value of the alarm variable (updated according to the selected option in alarm options).*
Acknowledged	*Alarm acknowledgment time ("-" if the alarm is not acknowledged).*
By	*Name of the operator who has acknowledged the alarm ("-" indicate, when the alarm is acknowledged, an acknowledgment performed automatically or from the supervised application).*

This list can be customized and sorted[16]. One can notably suppress some columns or add some of others:

Code	*Numerical code associated with the alarm tag.*
Reference	*Reference of the alarm tag.*
On-call Group	*Name of the on-call group associated with the alarm.*
C	*Comment indicator (*).*
R	*Report indicator (*).*
Reset	*Date of alarm reset (come back to normal state).*
Initial value	*Value of the alarm variable at alarm time.*
Comment	*Comment about the alarm.*

The current state of an alarm is represented by a configurable specific color (see § 7.3 "*Display options*"):

Default color	Status
Red	Alarm active and not acknowledged
Mauve	Alarm inactive and not acknowledged
Black	Alarm active and acknowledged
Gray	Alarm inactive and acknowledged
Blue	Alarm masked

---

[16] This list can be entirely customized (selection of columns to display, order, width and title of columns, alignment of the title or the column content).

To perform this customization, position the mouse cursor on the column of which one wants to modify the presentation and click on the right button of the mouse. Select then the adequate command in the displayed contextual menu. The new configuration is automatically saved to be restored for the next sessions.

The contextual menu also allows to configure the printing format of the list and to export the list to the clipboard or a file, with a configurable format.

The width of each column can be visually adjusted by positioning the mouse cursor on the concerned size bar of the title line, then clicking and dragging the bar to get the wanted size.

This list can also be sorted according to the increasing or decreasing order of each of its columns. To do this, click on the title of the wanted column: an arrow will indicate the increasing sense of the sorting. Click again on the title of the column to reverse the sort order (reversed arrow).

To perform a fast research for a value in the list, select the research column by clicking on its title, then scroll the list with the scroll bar: a "bubble" displays the content of the selected column for the 1st line of the list corresponding to the scroll bar position.

When an alarm has been acknowledged, the name of the operator who has proceeded to the operation appears on the line of the alarm in question, with the date and the hour of the acknowledgement.

When an alarm is selected in the list, the **descriptive alarm record** is displayed in the detail window located under the list. This record contains 3 parts:

*** ALARM ***

> *Descriptive and current state of the alarm, under the form:*

> *"Alarm message" (formatted)*

STATION	*Name of the station attached to the alarm*
GROUP	*Functional group of the alarm*
REFERENCE	*Reference of the alarm variable*
CONDITION	*Event condition*
PRIORITY	*Alarm priority*
ON CALL	*Name of the on-call group associated with the alarm*
ACTIVATION	*Alarm time*
VALUE	*Value of the variable at alarm time*
RESET	*Date of alarm reset*
ACKNOWLEDGMT	*Date of alarm acknowledgment*
BY	*Name of operator who has acknowledged the alarm*
COMMENT	*Comment text about the alarm*

*** INSTRUCTIONS ***

> *Content of the instruction file (if it is defined) with the contextual information acquired at the alarm time.*

*** HISTORY ***

> *Time stamped list of actions performed to process the alarm (warned operators, call failures, acknowledgment, alarm reset).*

A size bar allows the respective heights of the alarm table and detail window to be modified, by clicking over with the left button of the mouse and dragging the mouse cursor in the wanted direction, keeping the button pressed. When the mouse button is released, the bar is automatically located to the selected position.

6.2.1   Selection of displayed alarms

The **Station** dropdown list selects the alarms attached to a specific station. The choice "-" selects all alarms.

The **On Call** dropdown list selects the alarms which concern a specific on call group. The choice "-" selects all alarms.

The **Group** dropdown list selects the alarms attached a specific tag group. The choice "-" selects all alarms.

The **No Ack**, **Active** and **Unmasked** check boxes select the type of alarms to display in the list.

The **Listen** checkbox validates, when checked, the automatic listening of associated vocal messages (alarm message and possible vocal instructions) on selection of an alarm in the list.

6.2.2 Alarm acknowledgment

Select in the list a no acknowledged alarm, and click on the **Ack** button (or directly double-click on the representative line of the alarm). This button is not validated (grayed button), when there is no selected alarm or when the selected alarm is already acknowledged.

If calls are in progress for the alarm in question, the call cycle concerning this alarm is aborted.
An acknowledged alarm change of color and the operator's name having proceeded to the discharge is displayed in the list, with the date and the hour of the acknowledgment.

To acknowledge all alarms of a functional group or of an on call group, select the wanted group, and then click on the **Ack All** button. If no group is selected (Station, On call or Group), all alarms of the table are acknowledged.

6.2.3 Removing an alarm from the table

Select in the list an inactive and acknowledged alarm, and click on the **Delete** button. This button is not validated (grayed button), when there is no selected alarm or when the selected alarm is not acknowledged.

6.2.4 Editing a comment about an alarm

Note: this function is only available when the **database export** option is validated by the software license.

Select an alarm in the list then click on the **Comment...** button. In the displayed dialog box, type the text of the wanted comment.

When a comment is attached to an alarm, it can be read in the descriptive record of the selected alarm. It can also be read (and possibly modified) by clicking on the **Comment...** button. The alarm comment can be read later from the alarm history, even after the alarm has been removed from the alarm table.

When a comment exists for an alarm, it is indicated by an asterisk (*) displayed in the **C** column. This column is not visible by default. It can be added by clicking in the list with the right button of the mouse then selecting the **Display** command.

The comment can also be directly displayed in the **Comment** column (not visible by default).

6.2.5 Editing a report about an alarm

Note: this function is only available when the **database export** option is validated by the software license.

Select an alarm in the list, or select an alarm subset (by using the selections **Station**, **On Call** and **Group**), then click on the **Create...** button. Select the wished option: creation of report for the selected alarm or for all the following alarms in the displayed list. Finally type the report text in the report edition dialog box. A topic can be selected or defined. A voice report can be recorded. One or several files can be attached to the report.

The report attached to an alarm can be read (and possibly modified) by clicking on the **Edit...** button. If several reports are attached to the alarm, use the buttons "→" and "←" of the report dialog box to browse the different reports.

The reports about an alarm can be read later from the alarm history or the logbook. In the logbook, the alarm reports are indicated by a red "**!**" in the header bar of the report.

When a report exists for an alarm, it is indicated by an asterisk (*) displayed in the **R** column. This column is not visible by default. It can be added by clicking in the list with the right button of the mouse then selecting the **Display** command.

6.2.6 Printing

To print the displayed alarm list (according to the current selection) click on the **Print** button.

The printer which will be used is the printer selected by the **Print setup...** command of the **File** menu. If no setup has been performed, it is the default printer.

To define the printing format of the list, click with the right button of the mouse in the list of alarms, then select the **Printing**... command in the displayed contextual menu.

6.2.7 Exportation

The current alarm table can be exported in a file or in the clipboard (for copy it in a spreadsheet for example).
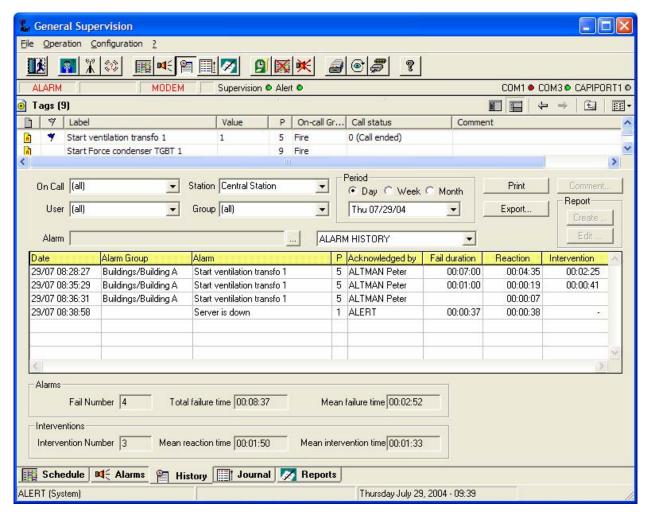
To perform this operation, click in the list with the right button of the mouse, then select the **Export...** command in the displayed contextual menu.

In the displayed dialog box, choose columns to export, the export format (header, separator) and the destination (file or clipboard).

6.3   Alarm history

To display the alarm history or consult the statistics about alarms or interventions, select the command "**History**" of the menu "**Operation**", or just click on the button [icon].

On the main screen, to access to the alarm history, select the **History** tab on the bottom of the screen.

This screen presents alternately:

- **The alarm history**
- **The alarm statistics**
- **The intervention statistics**

Select the wanted presentation in the dropdown list on the top right of the screen.

Whatever the chosen presentation, the history and statistic screen always contains three parts:

- The high part of the screen displays the different selectors that can be used to select the wanted history or statistic, as well as editing (comments and reports), printing and export commands.
- The median part of the screen contains the list that displays the history or statistics, according to the done selection.

- The low part of the screen contains global statistical counters concerning the done selection.

6.3.1   Choosing period to analyze

History and statistics can be done over 3 periods:

- *Daily*
- *Weekly*
- *Monthly*

Click on the corresponding radio button (day, week or month) to select the wanted period. Choose then in the dropdown list below the calendar period to analyze. This period is displayed in calendar days, in calendar week (beginning day - end day) or in calendar month according to the selected type of period.

6.3.2   Choosing scope of analysis

History and statistics can concern subsets of alarms or operators, according to a combination of possible selection:

Selection of a station

If a station is selected, the alarm history and statistics will only concern alarms attached to this station. For intervention statistics, only interventions concerning alarms attached to this station will be taken in account.

Selection of a tag group

If a group is selected, the alarm history and statistics will only concern alarms belonging to this group. For intervention statistics, only interventions concerning alarms of this group will be taken in account.

Selection of an on-call group

If an on-call group is selected, only the alarms concerning this group will be taken in account in the alarm history and statistics. Concerning intervention statistics, only interventions of operators belonging to this group will be taken in account.

Selection of an operator

If an operator is selected, only alarms acknowledged by this operator will be taken in account in the alarm history and statistics. Concerning intervention statistics, only interventions of the operator in question will be taken in account.

Selection of an alarm

If an alarm is selected, the alarm history and statistics will only concern this alarm. For intervention statistics, only interventions concerning this alarm will be taken in account.

To select an alarm, click on the button [...], on the right of the **Alarm** field and choose the wanted alarm in the displayed list. To suppress the selected alarm, perform the same operation, but in displayed dialog box, click on the line selected in the list for unselect it, then validate by **OK**.

Restriction of the statistic display (choice All / No null)

When the statistic display (alarms or interventions) is selected, the content of the list can be restricted to the items (alarms or operators) that have been counted at least one time by selecting the **No null** option.

6.3.3 History and statistics presentation

The list displayed in the median part of the screen depends on the type of selected history or statistics.

Alarm history

The list presents the whole of alarms that occurred on the selected period, in the chronological order of their appearance and in accordance with the filter done by the selection.

Every line represents an alarm on 9 columns:

Date	*Alarm time.*
Station	*Station attached to the alarm.*
Group	*Tag group of the alarm.*
Alarm	*Formatted message defined for the alarm.*
P	*Priority level of the alarm.*
Acknowledged by	*Name of the operator who has acknowledged the alarm (if the alarm is acknowledged).*
Fail duration	*Time during which the alarm was active (if the alarm is returned to the normal state), in seconds.*
Reaction	*Time between the alarm activation and its acknowledgment (if the alarm is acknowledged), in seconds.*
Intervention	*Time between the alarm acknowledgment and its return to normal state, in seconds. If the alarm is reset before its acknowledgment, the intervention time is not taken in account and is represented "-".*

This list can be customized and sorted[17]. The following columns can be added:

Code	*Numerical code associated with the alarm tag.*
Reference	*Reference of the alarm tag.*
On-call Group	*Name of the on-call group associated with the alarm.*
Value	*Value of the alarm tag at alarm time.*
C	*Comment indicator (*)*
R	*Report indicator (*)*
Reset	*Date and time of the alarm reset*

---

[17] This list can be entirely customized (selection of columns to display, order, width and title of columns, alignment of the title or the column content).

To perform this customization, position the mouse cursor on the column of which one wants to modify the presentation and click on the right button of the mouse. Select then the adequate command in the displayed contextual menu. The new configuration is automatically saved to be restored for the next sessions.

The contextual menu also allows to configure the printing format of the list and to export the list to the clipboard or a file, with a configurable format.

The width of each column can be visually adjusted by positioning the mouse cursor on the concerned size bar of the title line, then clicking and dragging the bar to get the wanted size.

This list can also be sorted according to the increasing or decreasing order of each of its columns. To do this, click on the title of the wanted column: an arrow will indicate the increasing sense of the sorting. Click again on the title of the column to reverse the sort order (reversed arrow).

To perform a fast research for a value in the list, select the research column by clicking on its title, then scroll the list with the scroll bar: a "bubble" displays the content of the selected column for the 1st line of the list corresponding to the scroll bar position.

Acknowledged	*Date and time of the alarm acknowledgment.*
Comment	*Comment about the alarm.*

Alarm statistics

The list presents statistics for the tags declared as alarm and corresponding to the done selection. In the displayed statistics, only are counted alarms that have been seen by Alert coming back to normal state. Every alarm tag is represented by a line, on 7 columns:

Station	*Station attached to the alarm.*
Group	*Tag group of the alarm.*
Alarm	*Formatted message defined for the alarm.*
P	*Priority level of the alarm.*
Fail number	*Number of time that the alarm triggered during the selected period. Only are taken in account alarms that came back in normal state.*
Total time	*Addition of time during which the variable was active, during the selected period, in seconds.*
Mean time	*Average time on the selected period, of the time during which the variable remained to the state of alarm, in seconds.*

This list can be customized and sorted[1]. The following column can be added:

Code	*Numerical code associated with the alarm tag.*
Reference	*Reference of the alarm tag.*
On-call Group	*Name of the on-call group associated with the alarm.*

Intervention statistics

The list presents the whole of operators concerned by the selection, every line representing an operator on 4 columns:

Operator	*Name of the operator.*
Interventions	*Number of time that the operator intervened during the selected period.*
Mean reaction time	*Average reaction time of the operator, in seconds. The reaction time is the time measured between the alarm activation and its acknowledgment.*
Mean intervention time	*Average intervention time of the operator, in seconds. The intervention time is the time measured between the alarm acknowledgement and its return to normal state.*

6.3.4 Global statistics

The low part of the screen contains some global statistics concerning the done selection.

Alarm statistics

Fail number	*Total number of failures (alarms) on the selected period and for the done selection. On the alarm history screen, all alarms are counted, that the alarm is reset or no. On the alarm or intervention statistic screen, only reset alarms are counted.*

Total failure time   *Addition of all failure times (time during which an alarm was active), on the selected period and for the done selection, in seconds. The calculation takes in account only alarms that are reset.*

Mean failure time   *Average of all failure times (time during which an alarm was active), on the selected period and for the done selection, in seconds. The calculation takes in account only alarms that are reset.*

Intervention statistics

Intervention number   *Number of interventions done by selected operators on the selected period and for alarms corresponding to the done selection.*

Mean reaction time   *Average reaction time of selected operators, on the selected period and for alarms corresponding to the done selection, in seconds. The reaction time is the time measured between the alarm activation and its acknowledgment.*

Mean intervention time   *Average intervention time of selected operators, on the selected period and for alarms corresponding to the done selection, in seconds. The intervention time is the time measured between the alarm acknowledgement and its return to normal state.*

6.3.5 Editing a comment about an alarm

Note: this function is only available when the **database export** option is validated by the software license.

Select an alarm in the list then click on the **Comment...** button. In the displayed dialog box, type the text of the wanted comment. The same command allows an alarm comment to be read (and possibly modified).

When a comment exists for an alarm, it is indicated by an asterisk (*) displayed in the **C** column. This column is not visible by default. It can be added by clicking in the list with the right button of the mouse then selecting the **Display** command.

The comment can also be directly displayed in the **Comment** column (not visible by default).

6.3.6 Editing a report about an alarm

Note: this function is only available when the **database export** option is validated by the software license.

Select an alarm in the list, or select an alarm subset (by using the selections **Station**, **On Call**, **Group**, **User** and **Alarm**), then click on the **Create...** button. Select the wished option: creation of report for the selected alarm or for all the alarms of the displayed list. Finally type the report text in the report edition dialog box. A topic can be selected or defined. A voice report can be recorded. One or several files can be attached to the report.

The report attached to an alarm can be read (and possibly modified) by clicking on the **Edit...** button. If several reports are attached to the alarm, use the buttons "→" and "←" of the report dialog box to browse the different reports.

The reports about an alarm can be read later from the alarm history or the logbook. In the logbook, the alarm reports are indicated by a red "**!**" in the header bar of the report.

When a report exists for an alarm, it is indicated by an asterisk (*) displayed in the **R** column. This column is not visible by default. It can be added by clicking in the list with the right button of the mouse then selecting the **Display** command.

6.3.7 Printing

To print the displayed list (alarm history, alarm statistics or intervention statistics), according to the current selection and chosen period, click on the **Print** button.

The printer which will be used is the printer selected by the **Print setup...** command of the **File** menu. If no setup has been performed, it is the default printer. To define the printing format of the list, click with the right button of the mouse in the list of alarms, then select the **Printing...** command in the displayed contextual menu.

6.3.8 Exportation

The content of the selected screen (alarm history, alarm statistics or intervention statistics) can be exported in a file or in the clipboard (to copy it in a spreadsheet for example).
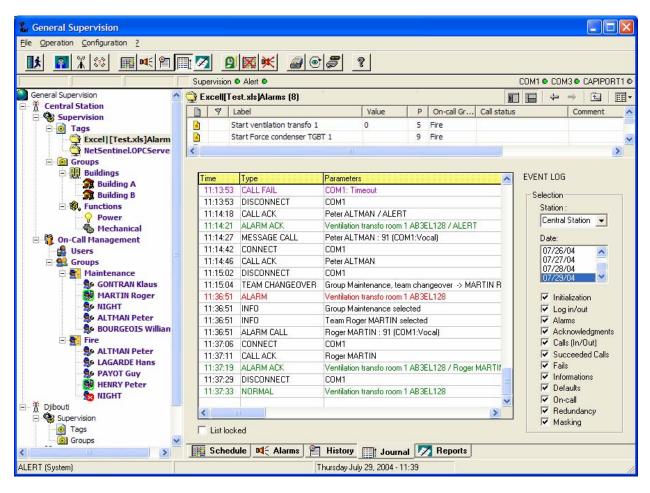
To perform this operation, either click on the **Export...** button *or* click with the right button of the mouse in the list, then select the **Export...** command in the displayed contextual menu. In the displayed dialog box, choose columns to export, the export format (header, separator) and the destination (file or clipboard).

Remark: following the choused installation option, the alarm history can also be automatically exported in real time to an external database (see § 8.3 "*External database*").

6.4   Event log

To display the journal which contains the event log, select the command "**Event log**" of the menu "**Operation**", or just click on the button 📇.

On the main screen, to access to the event log, select the **Journal** tab on the bottom of the screen.

The event log contains the history of all significant actions that intervened at the level of the alarm supervision station and each of the remote stations: operator login, alarms, calls, acknowledgements...

This event log is recorded in files (one file per day), located in the "TRACE" subdirectory of the application directory. The date corresponding to a file is coded in its name under the form:

TYYMMDD.LOG   with YY = year, MM = month, DD = day

6.4.1   Visualization

Every event is represented in the event log under the form of a time stamped line. The events that can be recorded in the event log are defined in the table of the following page.

Events	Parameters	Meaning
INIT	-	Application initialization
EXIT	-	Application closure
LOGIN	<operator>	User login
LOGOUT	<operator>	User logout
MESSAGE CALL	<operator> (<port>:<driver>)	Outgoing call for message
ALARM CALL	<operator> (<port>:<driver>)	Outgoing call for alarm
ADVISED	<operator>	Advised operator
UNADVISED	<operator>	Unadvised operator
CALL FAIL	<operator>: <cause>	Call failure
ALARM	<alarm message>	Alarm
ALARM ACK	<alarm message> / <operator>	Alarm acknowledgment [18]
NORMAL	<alarm message>	Alarm reset
CALL ACK	<operator> / <operator>	Call acknowledgment [19]
EVENT	<alarm message>	Simple event
CALL RECEIVED	<operator> (<port>)	Incoming call
WARNED GROUP	<on-call group>	Group call succeeded
UNWARNED GROUP	<on-call group>	Group call failed
DEROGATION	<on-call group> (-> <team>)	Schedule derogation[20]
END DEROGATION	<on-call group>	End of schedule derogation
TIME CHANGED	-	System date modified
REMOTE LOGIN	<operator> (<port>)	Login from a remote terminal
CONNECT	<port>	Connection established on a port
DISCONNECT	<port>	End of communication on a port
PORT FAILURE	<port>	Port failure (modem)
LINK FAILURE	<reference of server or item>	Link failure
INFO	<information>	Information message
OFF DUTY	<operator>	Operator set off duty
SUBSTITUTION	<operator> / <substitute>	Operator substituted
ALARM MASKED	<alarm reference> / <operator	Set of alarm mask
ALARM UNMASKED	<alarm reference> / <operator	Reset of alarm mask
DISACTIVATION	-	Alert management deactivation[21]
ACTIVATION	-	Alert management reactivation [4]
REMOTE LOGOUT	<operator>	End of remote session
ERROR	<error description>	Error
ON DUTY	<operator>	Operator set on duty
CALL DENIED	<operator> / <operator>	Call denied (negative call acknowledg.) [2]
TEAM CHANGEOVER	Group <G>, team changeover <A> -> <B> / <operator>, max delay <n> minutes	Team changeover team A to team B in group G [22]
CHANGEOVER FAILED	Group <G>, team changeover <A> -> <B>	Team changeover failed team A to team B in group G (timeout expired) [5]
END ON-CALL	Group <G>, team <E> / <operator>	End on-call time group G team E

<ins>List of journal events</ins>

---

[18] If the acknowledgement is issued from an external application, without identification of operator, the part "/ operator name" is suppressed.
[19] If the call is acknowledged by the called operator himself, the part "/ operator name" is suppressed.
[20] If no team is defined in derogation, the part "(-> team)" is suppressed.
[21] In redundant mode.
[22] If 1st changeover, the part "<A>" is suppressed, if default delay, the part ", max delay…" is suppressed.

When the event log is displayed, the following actions can be performed:

- Selection of the station to control in the **Station** list.
- Selection of the day to visualize by clicking on the wanted date in the **Date** list.
- Selection of the type of events to visualize, by clicking the corresponding checkboxes.

To consult past events, check the **List locked** option to disable the automatic scrolling of the list to the arrival of a new event. When this option is not checked, every new event provokes the automatic display of the event log of the current day in last position (to visualize the new event).

6.4.2   Printing

To print the displayed event log, according to the actual date and event type selection, click on the **Print** button.

The printer which will be used is the printer selected by the **Print setup...** command of the **File** menu. If no setup has been performed, it is the default printer.

To define the printing format of the list, click with the right button of the mouse in the list of alarms, then select the **Printing...** command in the displayed contextual menu.

6.4.3   Exportation

The displayed event log can be exported in a file or in the clipboard (to copy it in a spreadsheet for example).

To perform this operation, click in the list with the right button of the mouse, then select the **Export...** command in the displayed contextual menu. In the displayed dialog box, choose columns to export, the export format (header, separator) and the destination (file or clipboard).

6.5 Logbook

To display the logbook to consult or edit user reports, select the command "**Logbook**" of the menu "**Operation**", or just click on the button ![button] .
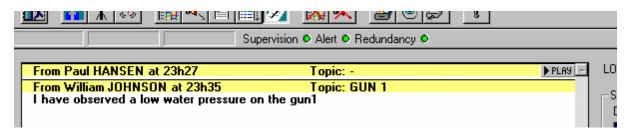
On the main screen, to access to the logbook, select the **Reports** tab on the bottom of the screen.

The logbook contains the written or oral reports which have been recorded by the operators, either locally (see § 6.6 "*Editing a report*") or by telephone (see § 8.1 "*Vocal server*").

This logbook is recorded in files (one file per day). These files are located in the "REPORT" subdirectory of the application directory. The date corresponding to a file is coded in its name under the form:

        RYYMMDD.LOG   with YY = year, MM = month, DD = day

Each report is represented by a heading line followed by the contents of a written report.

The report heading line contains:

- The name of the operator who has written the report in question.
- The edition date of the report.
- The topic matter of the report. This topic is a label which allows sorting of the reports. The topic is optional ("-" if there is no topic).
- An indicator of alarm report (![!]) if the rapport has been edited from the alarm table or alarm history.
- An indicator of attached files (![0]) if one or several files are attached to the report.
- To open the files attached to a report, click with the right button of the mouse on the symbol ![0], then select the wanted file in the displayed contextual menu.
- A button ![PLAY] if an audio message is associated with the report. Press this button to listen the message. Keep it pressed during the time you are listening the voice message.

When the logbook is displayed, the following actions can be performed:

- Select the day to visualize by clicking on the desired day in the **Date** list.
- Select the type of reports to be displayed, by performing a sort by author (**User** dropdown list) and/or topic (**Topic** dropdown list).

Click on the **New** button to create a new report (see § 6.6 "*Editing a report*").
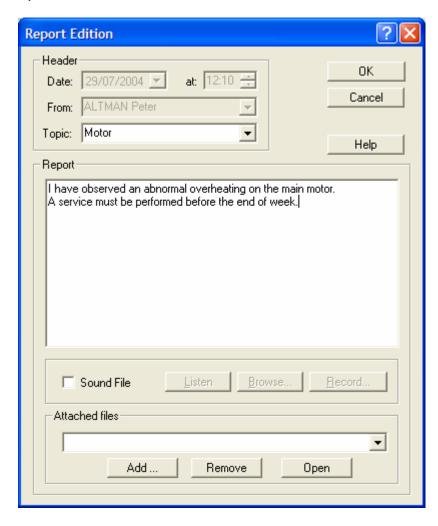
Click on the **Edit** button to edit the report selected in the list of reports (see § 6.6 "*Editing a report*"). Only the author of a report can edit it to change or complete it, on the condition that the right "report edition/modification" of the logbook is validated in his user profile.

Click on the **Delete** button to delete a report selected from the list of reports. When a report is deleted, the associated audio report, if it exists, is also deleted.

Click on the **Print** button to print the logbook corresponding to the date and to the selection author/topic done. The printer which will be used is the printer selected by the **Print setup...** command in the **File** menu. If no setup has been performed, it is the default printer.

6.6   Editing a report

To edit a report, select the display of the **logbook**, then click on the **New**"button to create a new report, or **Edit** to modify or complete an existing report (after having selected it from the list of reports).

If the "database export" option is validated by the software license, a report can be attached to one or more alarms. An **alarm report** can be edited (creation, consultation, modification) from the alarm table (see § 6.2.5), from the alarm history (see § 6.3.6), or from any view of the main screen displaying tags in alarm, by using the associated contextual menu (**Report** command).

Header

When creating a new report, this last is automatically **time stamped** and **signed** with the name of the user who creates it. This information (date, time and author) can be modified.

Only the author of a report can then re-edit it for modification, on the condition that the right "report edition/modification" of the logbook is validated for his user profile.

The buttons <-- and --> are only displayed for reports attached to an alarm and when several reports are attached to the same alarm. They allow the reports attached to a same alarm to be browsed.

One can attach the report (at its creation or at a following re-edition) to a **topic**, this last becoming a search criteria for consultation of the logbook.
The label of the topic can be selected from the list of existing topics or directly entered into the edit field (the new name is automatically added to the list).

Report

The written report is edited under the form of a note. The passage to the next line is automatic. It can be forced manually by pressing the "Enter" key.

A **vocal message** can be associated with a report.

By clicking on the **Browse...** button one can browse files for a "sound" file containing a pre-recorded audio message.

By clicking on the **Record...** button, one directly records the audio message. The file name is automatically created, under the form "Myymmxxx.WAV", "yy" representing the year, "mm" the number of the month and "xxx" being a numerical code from "000" to "999".

Click on the **Listen** button to listen to the audio message.

Attached files

One or several files can be attached to the report. The **Attached files** dropdown list contains the list of files attached to the report.

Click on the **Add...** button to add a file to the list of attached files.
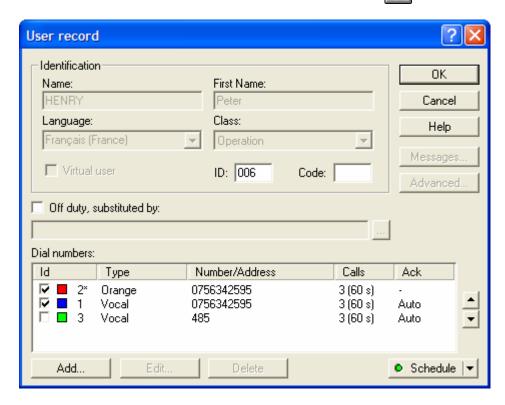
Click on the **Remove** button to remove the selected file from the list of attached files.

Click on the **Open** button to open the file selected in the list of attached files. The "Open" action is defined by the association that has been done for the type of the selected file (following the file extension).

6.7 Consultation of operator's properties

At any moment an operator can consult his own operator record and modify some parameters.

To access to his file, the operator must select the command "**User record...**" of the "**Operation**" menu. He can do it easily by clicking on the button 🔲.
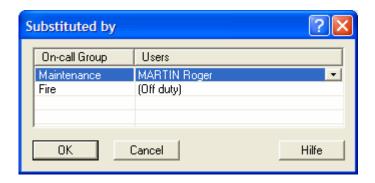
This dialog box displays the properties of the operator who is logged on the application.

The basic properties of the operator (name, first name, language, class, station, creation and call options) cannot be modified at this level. See § 5.1.1 "*User properties*".

6.8 Definition of substitutes

This dialog box can be called from the property dialog box of a user (see § 5.1.1 *"User properties"*) or directly from the tree of the main screen or associated views by selecting the command **Substituted by...** in the contextual menus attached to the **On-call management** sub-tree (see § 4.6.1.7 *"On-call Management"*).

This dialog box allows the designation of a substitute for one or several users in each one of their groups of membership. It displays the list of all the groups of membership of the user concerned by the substitution, except when the group is implicitly indicated when calling the substitution dialog box (designation of a substitute in a view "<Group name>" or "<Team name>").

If the dialog box was called with several users selected (designation o a same substitute for several users), the list of all the groups of membership of the user is displayed.

If the user selected when calling the substitution dialog box was substituted in a group, the name of its substitute is displayed on the corresponding line. If not, its status is indicated "(Off duty)" or "(Active)". If there were several users selected when calling the substitution dialog box, the groups for which the status is not defined in a uniform way for the selected users are marked with an indefinite status ("-").

For each displayed group, select the wished substitute for the group in the drop-down list by clicking on the corresponding line of the "Users" column. This list contains the list of the operators of the corresponding group, except for the users already selected to be substituted.
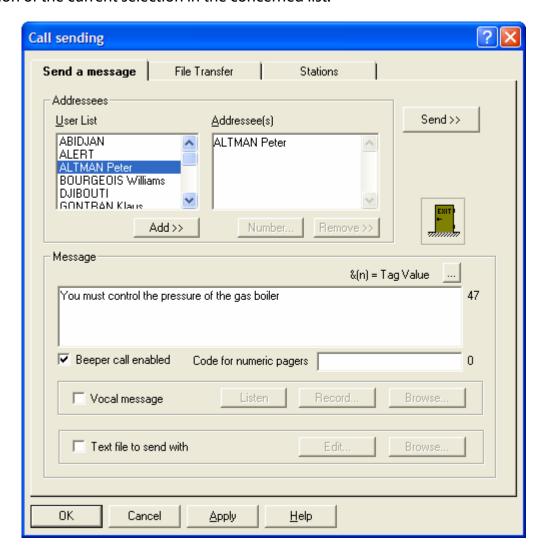
The following particular choices will be noted:

- The choice "**-**" indicates that the status and the user substitute are not affected for this group. After validation, the selected users will remain in their initial status regarding this group.

- The choice "**(Off duty)**" indicates that the selected users must all be put off duty, without substitute, regarding this group.

- The choice "**(Active)**" indicates that the selected users must all be put on duty regarding this group.

6.9 Sending a message

To transmit a message to one or more operators, select the command **Send a message...** in the **Operation** menu, or simply click on the button .

This dialog box also can be called from the tree of the main screen or the associated views by selecting the **Call...** command in the contextual menus attached to the **On-Call Managemen*t*** sub-tree (see § 4.6.1.7). In this case, the operators to call or pre-selected in function of the current selection in the concerned list.

Addressees

To select the addressee operators, use one of the 2 following methods:

- either select the name of the user from the user list, then click on the **Add** button.
- or click on the name of a user in the user list, then drag him to the receiver list, keeping the mouse button pressed (release the button over the destination).

A double click in the user list displays the properties of the selected user.

In case of error, to delete an operator from the addressee list, one can:

- either select his name from the addressee list, then click on the **Remove** button.

- or click on his name in the addressee list then drag it to the "exit" icon, keeping the mouse button pressed (release the button over the destination).

The dial number to use to reach a user can be specifically designated. This number will be called regardless of the current dial number schedule of the called user.

To designate a specific dial number for the user selected in the receiver list, click on the **Number…** button. In the displayed dialog box, choose the option "selected number" then select the number to call.

When a dial number is specified, its identifier in the dial number directory of the user is written after the user name in the receiver list under the form <Id>.

<u>**Message**</u>

The message to send can be entered under 3 formats:

- **Numeric format**: message from 0 to 32 characters destined to operators having a numerical pager. The number of entered characters is displayed on the right of the edit field. The character set is free. The characters not allowed by a type of pager will be filtered out at the time of transmission.

- **Alphanumeric format**: message from 0 to 512 characters destined to operators having an alphanumeric pager (or a printer). The number of entered characters is displayed on the right of the edit field. The character set is free. The characters not allowed by a type of pager will be filtered out at the time of transmission.

- **Audio format**: vocal message destined to operators who will be reached by telephone.

The alphanumeric message can contain variable fields. To incorporate in the message the value of a tag of the supervision list, click on the button ⌊…⌋. In the displayed dialog box, select the wished tag then validate. The numerical identifier of the tag is inserted in the edit field at the current cursor position, under the form: &(tag id).

To define an audio message, click on the **Browse…** button to browse files for a sound file containing a pre-recorded audio message or click on the **Record…** button, to directly record the audio message. The audio file is automatically created with the format name "MCxxxx.WAV", "xxxx" being a numerical code between "0000" and "9999". The file is recorded in the "MESSAGE" sub-directory.

Click on the **Listen** button to listen to the selected audio message.

Remark:

If the "**voice synthesis from the text**" option is available, the vocal message can be directly synthesized from the alphanumeric message entered.
To request for the synthesis of the alphanumeric message, check the ***Vocal message*** option. To test the voice synthesis of the alphanumeric message entered, click on the ***Listen*** button.

When checked, the **Beeper call enabled** option validates the call of operators configured with a beeper number.

A text file can also be associated with the message. This file is used to transmit some further information by fax or email. It can be defined as "contextual" and incorporate the value of variables of the supervision list.

Click on the **Edit** button to directly type the text to transmit. This text is recorded in a text file, in the "MESSAGE" sub-directory, with a name under the format "MCxxxx.TXT", "xxxx" being a numerical code between "0000" and "9999".

Click on the **Browse** button to search and select an existing text file
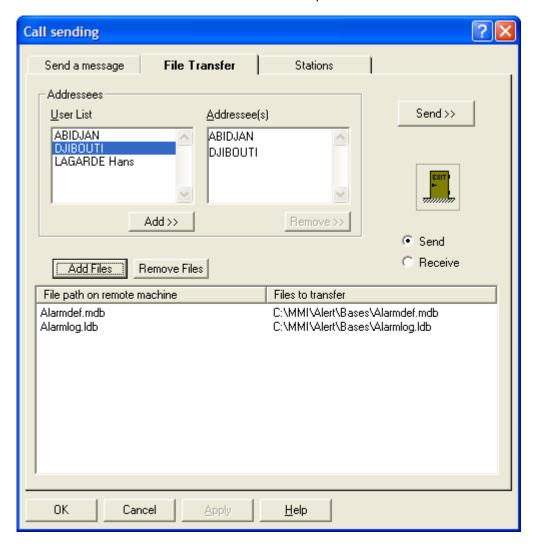
Validation / Transmission

By clicking on the **OK** button, one leaves the dialog box with recording of the message in the mailbox of each of the operators selected as addressee.

By clicking on the **Send >>** button, one leaves the dialog box with starting the immediate transmission of the message to the operators selected as addressee.

6.10   File transfer

To transmit files to one or more operators, select the **Send a message...** command from the **Operation** menu, or just click on the button [icon], then select the tab **File Transfer**:

Addressees

The list on the left top of the dialog box displays the users configured with a number associated with driver allowing the file transfer (Email, Alert Modem, Alert Socket, Alert Direct).

To select a user to reach, you can:

- either select his name in the list then click on the **Add** button,
- or click on his name in the list then drag it over the list of addressees.

A double-click in this list displays the properties of the selected user

In case of error, to remove a user from the list, you can:

- either select his name in the list then click on the **Remove** button,
- or click on his name in the list then drag and drop it over the "exit" icon.

File selection

The files to upload are designated in the transfer list.
The right column describes the full path of the files on the local station.
The left column gives the name and the path that will have the files on the target station.

For a transfer by email, the files are attached files. Changes of name and path are ignored.

For a transfer made by a synchronization driver (Alert Modem, Alert Socket, Alert Direct), the files will be copied in the download directory of the target station. This directory is defined on the target station in the parameters of the corresponding synchronization driver.

Select the files to send by clicking on the **Add Files** button. This action displays a dialog box to browse and select the files to add to the file list.

To remove files from the list, select them in the file list the click on the **Remove Files** button.

Validation / Transmission

Select the transfer direction:

Send: the files are sent to the remote station (upload)
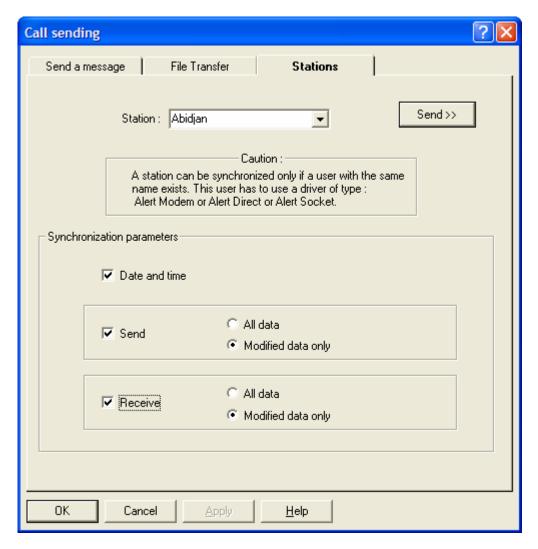
Receive: the files are received from the remote station (download)

Clicking on the **Send >>** button exits the dialog box with immediate transfer of the chosen files to the users selected as addressees.

Clicking on the **OK** button exits the dialog box with recording of the list of files to transfer with their destination directory for a later transmission.

6.11   Station synchronization

To synchronize the configuration of one or several remote stations, select the **Send a message...** command from the **Operation** menu, or just click on the button [icon], the select the tab **Stations**.

To be able to synchronize remote stations, it is necessary first to define for every remote station a (virtual) operator having a call number attached to a synchronization driver (Alert Modem, Alert Socket, Alert Direct).

Station

The **station list** displays the list of users configured with a driver having synchronization capabilities and who have the same name as one of the defined stations. Select in this list the station to synchronize.

Synchronization options

The synchronization options are:

- **Date and time**. The calling station set the date of the called station. To be able to set the date and time, the called station needs to select the Alert driver option: "Date and time updates enabled".

- **Configuration synchronization**. If the local station is the main station, the synchronized data are the data associated to the called station. If the local station is a remote station, the synchronized data are its own data. For both case, one can send and/or receive all the configuration data or only the modified data (since the last synchronization).

The synchronized data are the users, the on call groups, the teams, the tag groups, the on-call schedule and the tags.
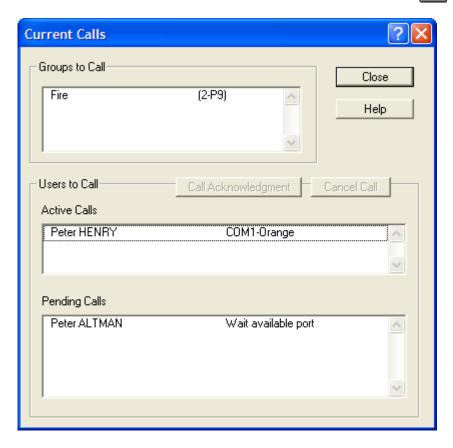
<u>**Validation / Transmission**</u>

To begin the synchronization, click on the **Send>>** button.

Clicking on the **OK** button exits the dialog box with recording of the list of synchronization options for a later transmission.

6.12   List of calls in progress

To examine the current calls state or to locally **acknowledge a call**, select the **Calls in progress...** command of the **Operation** menu, or just click on the button 🔘.

This dialog box is modeless (this means that the user can continue to use the others functions of the application) and is updated in real-time.

<u>**Groups to Call**</u>

List of all the on call groups for which at least a call was required:

    1st column: name of the group.

2nd column:	number of alarm call requests, followed by the priority level of the most important active alarm.

Active Calles

List of the calls in progress.

1st column:	name of the called user.
2nd column:	port - driver name (used for the call).

Pending Calls

List of the suspended or waiting calls.

1st column:	name of the user to call
2nd column:	cause of suspension or waiting

Button *Call Acknowledgment*

Click on this button to acknowledge the call for the user who is selected either in the list of calls in progress, or in the list of pending calls.

When a call is acknowledged by an operator, the reference of the call disappears from the list (of calls in progress or pending calls). If the call was in progress, it is aborted.

Button *Cancel Call*

Click on this button to abort the call (without acknowledgment) for the user who is selected either in the list of calls in progress, or in the list of pending calls.
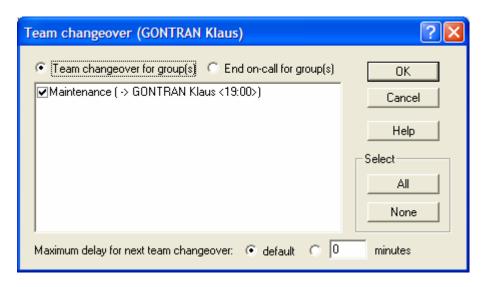
6.13   Team changeover

To declare the beginning or the end of his on-call period (clock in or out), an operator can select the **Team changeover…** command in the **Operation** menu, or simply click on the button .

Remark: A team changeover also can be directly ordered from the contextual menu displayed when clicking with the mouse right button on the icon of the team to change in the tree of the main then selecting the command **Team changeover** or **End on-call** (see § 4.6.1.10 "*Teams*").

According to the selected management mode of the team changeover (see § 5.3.1 "*On-call group properties*"), this operation can be required or not:

- If the **Team changeover mandatory** option is not checked (default mode), the team changeover is performed automatically according to the planned on-call schedule. A team changeover operation can be forced, but only in the case of a changeover made in advance (before the end of the planned period) or an early end of the on-call period.

- If the **Team changeover mandatory** option is checked, the team changeover operation has to be performed by one of the users of the new on-call team, at the time scheduled for the team changeover, within a configurable deadline. If the team changeover has not been performed when the deadline is reached, a team changeover fault is signaled with possibility of alarm trigging. Similarly at the end of the on-call period, if no other team is planned, one of the users of the on-call team has to clock out. Failing which the team will remain on-call beyond the planned period.

Team changeover

The **Team changeover** selection designates a clock-in operation: the operator clocks in to begin its on-call period. After validation, the user (and its team) will be on-call for all the selected groups.

End on-call

The **End on-call** selection designates a clock-out operation. The operator clocks out to signal that he leaves (with its team) and its on-call time is over. After validation, nobody is on-call for the selected groups.

Note: The "End on-call" operation is not required when a team replaces an other. The changeover of a team A to a team B ends the on-call time of the team A.

If the "Team changeover mandatory" mode is selected, The "End on-call" operation provokes the transition to the "Waiting for team changeover" state with a timeout initialized to the default value configured as "Maximum delay for team changeover" for the group. If the scheduled team (if it is defined) has not clocked before the end of this timeout, the "ChangeoverStatus" variable of the concerned group changes to the state 3 ("Timeout for team changeover expired"), with possibility of trigging an alarm.

List of groups

This list displays the groups for which the identified operator (designated in the title bar) can perform a team changeover, begin or end of on call period according to the selection "Team changeover " / "End on-call".

- **Team changeover**

  The list displays all the candidate groups for which the user designated in the title bar can clock in, with the proposed team in brackets. The proposed team is either the scheduled on-call team if it is not yet active or the next scheduled on-call team if the active team is this one that was planned. Only the groups having a team to propose and for which the user belongs to the proposed team are displayed.

- **End on-call**

  The list displays all the candidate groups for which the user designated in the title bar can clock out, with the concerned team in brackets. Only the groups for which the user belongs to the active team are displayed.

Click on the **All** button to select all the groups proposed for the team changeover.

Click on the **None** button to unselect all the groups proposed for the team changeover.

<u>Maximum delay for next team changeover</u>

This option defines the maximum authorized time to perform the next team changeover. The **default** option selects the default value of the group (see § 5.3.1 *"On-call group properties"*).

At the end of the on-call period of every selected group, if no team changeover has been performed, this time is counted. When the defined time is expired without team changeover, the "ChangeoverStatus" variable of the concerned group changes to the state 3 ("Timeout for team changeover expired"). This variable, which can be consulted by DDE or API, can be used to trig an alarm.

6.14   Schedule derogation / Call locking

If necessary (during an intervention on site for example), it is possible to temporarily depart from the on-call schedule of a group by forcing this group in derogation state.

When a group is in derogation state, its on-call schedule is ignored and all the alarm calls for the group either are redirected to a team which was predefined at the derogation time, or they are discarded or suspended[23] (calls locked) if no team has been designated for the call redirection.

To lock the calls for a given group, select the **Calls locked** command in the contextual menu displayed when clicking with the mouse right button on the icon of the group in the on-call management tree (see § 4.6.1.9 *"On-call groups"*). The icon of the locked group signals that the group cannot be called: .

To unlock the calls for a given group, select the same command in the contextual menu displayed when clicking with the mouse right button on the icon of the group (command checked to signal locked status of the group). If a team is planned in the schedule, it automatically becomes on-call and the icon of the group signals that the group can be called again: .
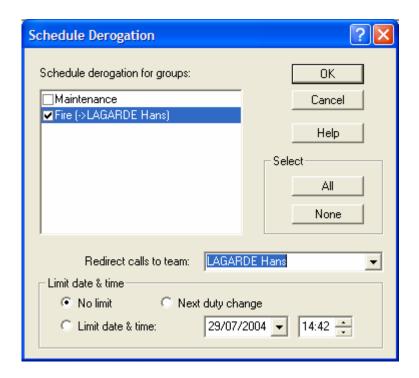
To redirect the calls addressed to a group to a team of the group, select the **On-call (forced)** command in the contextual menu displayed when clicking with the mouse right button on the icon of the team in the on-call management tree (see § 4.6.1.10 *"Teams"*). The icon of the forced team signals that the team is active: .

To end the redirection of the calls to a team, select the same command in the contextual menu displayed when clicking with the mouse right button on the icon of the team (command checked to signal forced status of the team). The team which is planned in the schedule then automatically becomes active.

To force one or more groups in derogation state, or consult the list of groups in derogation state, select the **Schedule Derogation...** command in the **Operation** menu or click on the button .

This command displays the following dialog box:

---

[23] Following the call option "Discard call if no team to call when alarm is activated ".

Schedule derogation...

The list displays the whole of groups with their current derogation state. Groups in derogation state are checked.

When a group is in derogation state, all calls that concern it are redirected to the derogation team (indicated in brackets on the right of the group name). If there is no derogation team designated, calls are discarded or suspended according to the call option **Discard call if no team to call...** (see § 7.5 "*Call options*").

➢ Click on the checkbox of a group to change it in derogation (box checked) or in normal on-call state (box not checked).

➢ Click on the **All** button to change all groups to derogation state.

➢ Click on the **None** button to change all groups to normal on-call state.

Redirect calls to team

When a group is selected in the list, one can select the associated derogation team in the list **Redirect calls to team**. This team will be the one to which will be redirected all the calls intended to the group in question when this last is forced in derogation state (checked in the group list).

The dropdown list displays the list of all defined teams for the selected group. The choice "(none)" means that there is no derogation team for the selected group.

Limit date & time

This group defines the limit time for the derogation of the selected groups:

• If the **No limit** option is checked (default option), the selected groups remain indefinitely in derogation state, until an explicit command to end the derogation.

• If the **Next duty change** option is checked, the selected groups remain in derogation state until the next team changeover.

• If the **Limit date & time** option is checked, the selected groups remain in derogation state until the date and time defined in the adjacent field.
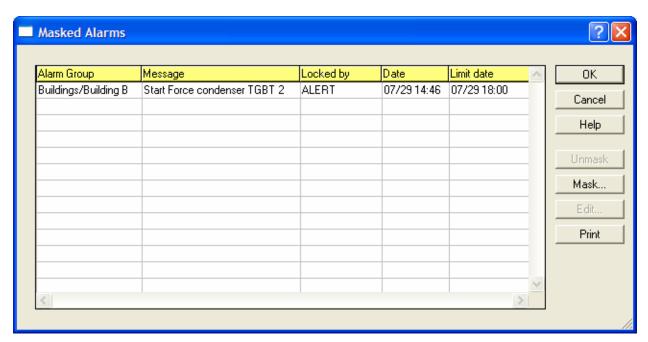
When at least a group is in derogation state, the "DEROG." indication is displayed in the fault indicator of the alarm status bar.

The changes of derogation state are recorded in the event log.

6.15 Masked alarms

To mask or unmask alarms or to visualize the list of masked alarms, select the **Alarm Mask/Unmask...** command of the **Operation** menu, or click on the button 🔳.

Note : an alarm or a group of alarms also can be masked and unmasked from any of the tag views associated with the branches of the supervision tree in the main screen (see § 4.6.1.4 "*Tags*").

This dialog box contains the list of alarms that are currently masked.

List of masked alarms

Each line of the list displays a masked alarm on 5 columns (by default):

Group	*Functional group of the alarm.*
Message	*Alarm message associated with the event.*
Locked by	*Name of the operator who masked the alarm ("-" indicates a mask command performed by the supervised application).*
Date	*Date and time of the mask command.*
Limit date	*Limit date and time of the mask ("-" indicates an unlimited mask).*

This list can be customized and sorted[24]. It is possible to add other columns:

---

[24] This list can be entirely customized (selection of columns to display, order, width and title of columns, alignment of the title or the column content).
To perform this customization, position the mouse cursor on the column of which one wants to modify the presentation and click on the right button of the mouse. Select then the adequate command in the displayed contextual menu. The new configuration is automatically saved to be restored for the next sessions.
The contextual menu also allows to configure the printing format of the list and to export the list to the clipboard or a file, with a configurable format.

Station	*Name of the station attached to the alarm.*
Code	*Numeric code of the tag.*
Reference	*Reference of the tag.*
On-call group	*Name of the on-call group attached to the alarm.*
C	*Indicates that a comment exists (*) about the masking action (click on the* **Edit** *button or double-click on the line to read the comment).*
Comment	*Comment about the masking action.*

Treatment of masked alarms

The masked alarms do not trig calls and are not logged in the alarm history. If a masked alarm is activated, it results in a simple message of type "EVENT" in the event log. The masked alarms normally do not appear in the alarm table. To display in the alarm table the masked alarms that are active or not acknowledged, uncheck the **Unmasked** filter in the status bar of this table.

A limit date and time can be defined when masking an alarm. In this case the alarm is automatically unmasked at the end of the defined time.

Masking an alarm or a group of alarms

To mask an alarm or a group of alarms, click on the **Mask...** button. This action displays the list of no masked alarms.

To mask an alarm or a group of alarms, select the desired alarm or the whole subset defined by the filter options **Station** (to select a station), **On Call** (to select an on-call group) or **Group** (to select a tag group), check the **Selected list** option then validate by the **OK** button..

After the selection of an alarm or a group of alarms, a dialog box is displayed to define the limit date and time of the mask and possibly type a comment (see § 6.15.1 "*Masking / Unmasking alarms*" below).

The mask command will be taken in account only when exiting of the **Masked Alarms** dialog box by clicking on **OK**.

Unmasking an alarm

To unmask an alarm, first select it in the list (by clicking on the corresponding line), then click on the **Unmask** button. This button is validated only when an alarm is selected in the list.

Lookup, edition of the comment, modification of the limit time

To consult the masking comment of an alarm or modify it or to change the limit time of an alarm mask, select the alarm in the list (by clicking on the corresponding line), then click on the **Edit...** button (see § 6.15.1 "*Masking / Unmasking alarms*" below). This button is validated only when an alarm is selected in the list.

Printing

To print the list of masked alarms, click on the **Print** button.

The width of each column can be visually adjusted by positioning the mouse cursor on the concerned size bar of the title line, then clicking and dragging the bar to get the wanted size.

This list can also be sorted according to the increasing or decreasing order of each of its columns. To do this, click on the title of the wanted column: an arrow will indicate the increasing sense of the sorting. Click again on the title of the column to reverse the sort order (reversed arrow).

To perform a fast research for a value in the list, select the research column by clicking on its title, then scroll the list with the scroll bar: a "bubble" displays the content of the selected column for the 1st line of the list corresponding to the scroll bar position.

The printer which will be used is the printer selected by the **Print setup...** command of the **File** menu. If no setup has been performed, it is the default printer.

To define the printing format of the list, click with the right button of the mouse in the list of alarms, then select the **Printing...** command in the displayed contextual menu.

Exportation

The list of masked alarms can be exported in a file or in the clipboard.
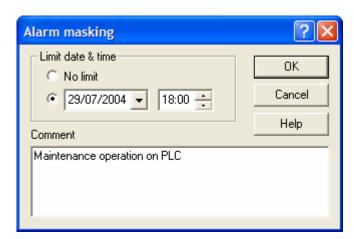
To perform this operation, click in the list with the right button of the mouse, then select the **Export...** command in the displayed contextual menu.

In the displayed dialog box, choose columns to export, the export format (header, separator) and the destination (file or clipboard).

6.15.1   Masking / Unmasking alarms

Masking and Unmasking of alarms can be performed by using the command **Alarm masked** in the contextual menu associated with the tag views of the main screen (see § 4.6.1.4 "*Tags*").

The list of masked alarms can be displayed by selecting the **Alarm Mask/Unmask...** command of the **Operation** menu, or clicking on the button ![icon]. See above.

Limit date & time

Define here the limit date and time of the mask. At the end of this time the alarm will be automatically unmasked.
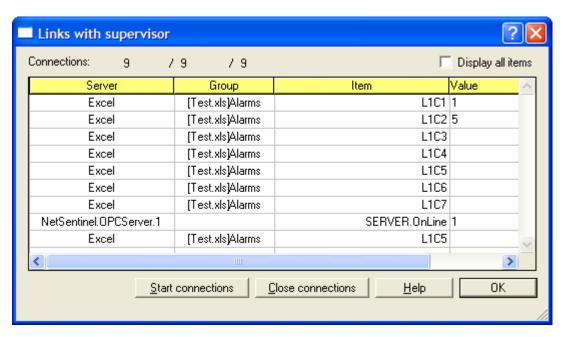
The choice **no limit** indicates that the alarm is masked without time limit. It will be masked until a user comes to explicitly unmask it.

Comment

Write in this field the comment about the masking action of the alarm (or any other information concerning the masking action).

6.16 Control of DDE and OPC links

To control the state of the connections established with the DDE or OPC server applications, select the **Links**... command from the **File** menu.

The link list contains a list of all the items currently polled by DDE or OPC, for which the connection with the DDE or OPC server has been established, and a response to a first request has been received:

Server   Name of the server application

Group   Name of the variable group (DDE topic for DDE variables)

Item   Name of the item

Value   Current value of the item

This list can be customized[25].

Connections

The number of established connections is indicated above of the list under the form:

Number of response received / Number of connections established / Number of connections to establish

---

[25] This list can be entirely customized (selection of columns to display, order, width and title of columns, alignment of the title or the column content).

To perform this customization, position the mouse cursor on the column of which one wants to modify the presentation and click on the right button of the mouse. Select then the adequate command in the displayed contextual menu. The new configuration is automatically saved to be restored for the next sessions.

The width of each column can be visually adjusted by positioning the mouse cursor on the concerned size bar of the title line, then clicking and dragging the bar to get the wanted size.

This list can also be sorted according to the increasing or decreasing order of each of its columns. To do this, click on the title of the wanted column: an arrow will indicate the increasing sense of the sorting. Click again on the title of the column to reverse the sort order (reversed arrow).

To perform a fast research for a value in the list, select the research column by clicking on its title, then scroll the list with the scroll bar: a "bubble" displays the content of the selected column for the 1st line of the list corresponding to the scroll bar position.

Option *Display all items*

When this option is checked, the value of all the tags of the supervision list are displayed in the list, including those which are not polled (no DDE or OPC tags).

Button *Start connections*

This button allows the establishment (or re-establishment) of the connections of the tags designated as polled tags in the supervision list.
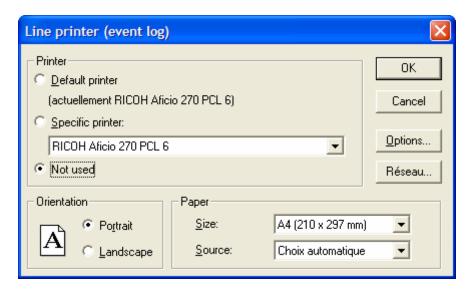
Note: The establishment of the links is automatically performed at start-up of the application. However, if some links couldn't have been started (closed application) or have been broken since, this command gives the possibility of manual restoration.

Button *Close connections*

Click on this button to close all current connections (stop all polling).

6.17 Line printer

The event log can be sent in real time onto a printer. To select and configure this printer, click on the **Line printer...** command from the **File** menu.

Select the desired printer from this dialog box, or choose the **Not used** option if no line printer is being used.

The line printer can be connected to a local port or the port of another PC connected on a network. This must be a "line" type printer (dot matrix), and not a "page" type printer (laser).
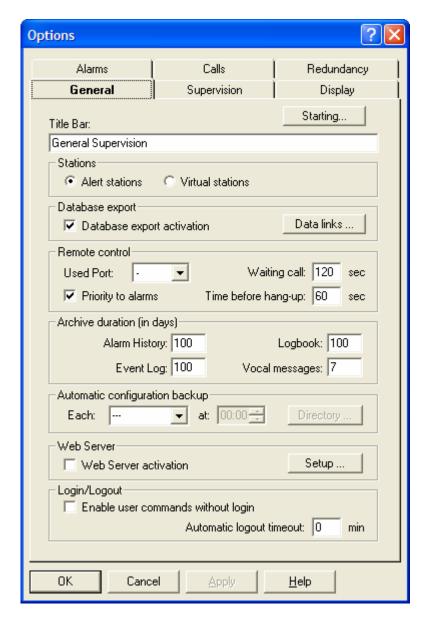
Click on the **Options** button to configure the printer.

7 OPTIONS

7.1 General options

To access the configuration of the general options, select the **Options…** command of the **Configuration** menu.

This dialog box also can be called from the contextual menu associated with the root of the tree in the main screen.

Starting...

Click on this button to define the working mode of the software at launching time (see § 7.1.1*Starting parameters*").

Title Bar

This field defines the content of the title bar of the application (maximum 40 characters). The default title is "ALERT".

Stations

Mode of management of the stations:

➢ The **Alert stations** option indicates that the stations defined in the application are real stations equipped with the Alert software for the alarm centralization and capable of managing a local on call organization in synchronization with the centralization station.

➢ The **Virtual stations** option indicates that the stations defined in the application are virtual stations, created to segment the data and/or the on-call management in meaning entities (representation of remote sites, companies, trades...).

Database export

This group allows the real time export to an external database (see § 8.3 *"External database"*) to be configured and activated or deactivated. The commands of this group are only enabled when the "database export" option is validated by the software license.

• Check the option **Database export activation** to activate the database export functionality. Uncheck this option to stop the database export.

• Click on the **Data links...** button to select the files that define the link with the external database:

➢ AlertDB_AlarmDef.udl (configuration database)

➢ AlertDB_AlarmLog.udl (history database)

By default, these files are installed in the application subdirectory "Bases". The link parameters with the wished database must be prior configured and tested by opening each of these files (by double click).

Remote control

This group defines the management parameters of external remote control software (see § 8.5 *"Remote Control"*).

• The **Used port** dropdown list designates the communication port to be shared with the remote control software. This port will be automatically assigned to the remote control software, either at the software launching if the remote control software is running at this time and is using the port, or on explicit requirement of a remote user (command "99" of the vocal server).

• The **Waiting call** edit field defines the maximum time waited for the remote control callback. This time is counted from the line hang-up. After this delay, the remote control software is breakdown and the communication port is retrieved by Alert. In order to give time to the remote control application to be launched, it is preferable do not enter a value below 30 seconds.

• When the **Priority to alarms** option is checked, all call requested during a remote control session and that will need the port used by the remote control software, will cause a warning message to be displayed to inform the operator that the remote control session will be aborted in the delay that has been defined in the adjacent field.

- The **Time before hang-up** edit field defines the time waited before aborting the remote control session when Alert needs the port used by the remote control application to make a call. This delay is taken in account only when the option "priority to alarms" is checked.

Archive duration

This group defines the duration of storage of recorded data. Any data recorded before the specified archival duration for the concerned data category is automatically destroyed at the start-up of the Alert application and at every change of day.
The archived data are:

- **Alarm History**: daily files of type "HYYMMDD.LOG" located in the "HISTO" subdirectory (100 days by default).

- **Event Log**: daily files of type "TYYMMDD.LOG" located in the "TRACE" subdirectory (100 days by default).

- **Logbook**: daily files of type "RYYMMDD.LOG" located in the "REPORT" subdirectory, as well as the associated audio files of the "MYYXXXXX.WAV" type (100 days by default).

- **Transmitted vocal messages**: audio files of type "MCXXXX.WAV" in the "MESSAGE" subdirectory (7 days by default).

Automatic configuration backup

This group defines a periodic backup of the configuration in a designated directory. To program a backup, select a period (date and time) and a backup directory. (Default is "backup" in application directory).

WEB Server

This group allows the activation and the configuration of the WEB server module that is necessary to use the JALERT client interface.
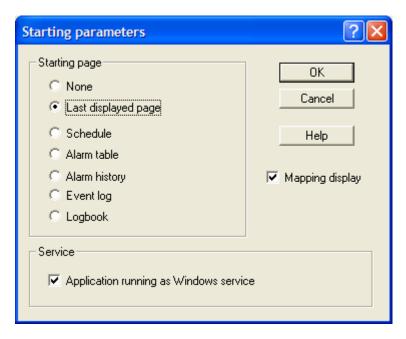
Login / Logout

- The option **Enable commands out of login** allows some operations to be authorized without having to be logged on the application: call or alarm acknowledgment, alarm masking/unmasking, edition of an alarm comment or report , call transmission, …
When this option is validated, every commands that require the designation of the accountable user for the performed action (acknowledgment, masking …) provoke the display of a dialog box to get the name of the user and his password. The command is only accepted if the profile of the designated user authorizes it.

- The parameter ***Automatic logout timeout*** defines the time after which the application will be automatically logged out if there was no user action in the middle time (mouse or keyboard action).
The value 0 corresponds to an infinite time (no automatic logout).

7.1.1 Starting parameters

The **Starting parameters** dialog box defines the working mode of the software at launching time (starting page, user interface).

Starting page

The displayed page at the start time of the software can be defined by selecting one of the options of this group. When the "none" option is selected, the starting screen does not display any window.

Mapping display

This option validates the new user interface of the version 3.5. That interface displays a mapping view of the application with "Explorer" looks on 3 windows.
The old interface can be restored by unchecking this option.

Service

Select this option to declare the software as Windows service.
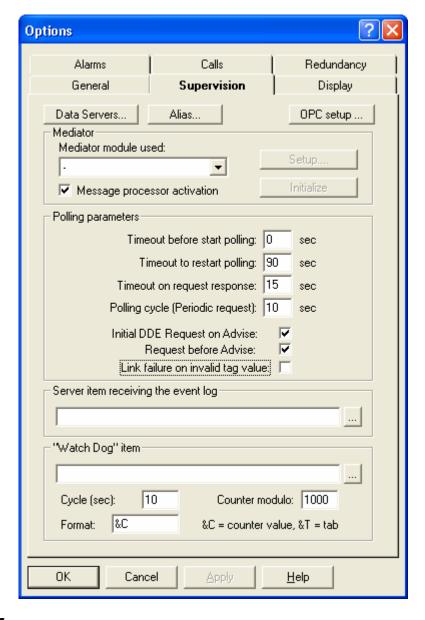
When this option is checked, the software is automatically registered as a Windows service. It will be then automatically launched as service at the next system restarts and will be operational even if there is no open session.

To unregister the software as Windows service, you have just to uncheck this option.

(See § 8.6 "*Alert as service*").

7.2   Supervision options

To configure the supervision options, select the **Options…** command of the **Configuration** menu, then, on the displayed dialog box, select the **Supervision** tab.

Button *Data Servers…*

This button gives access to the list of the DDE and OPC servers that are referred to in the polling list. It allows a list of secondary (redundant) servers to be defined for each referred server (see § 7.2.1 "*Secondary DDE Servers*").

Button *Alias…*

This button gives access to the definition of alias names for the DDE server and topic names
The alias names allow a same name to be used to refer to different servers or topics in redundant configurations (see §7.2.1 "Secondary DDE Servers").

Button *OPC Setup…*

This button gives access to the configuration of the Client and Server OPC interface.

Mediator

This group allows the selection of the **mediator**[26] module which will be in charge of the interface with the supervised application.

Select in the drop down list the name of the "Mediator" module. By default, there is no mediator selected (choice "-"). To add a mediator to the list, one only have to copy the DDL file of the mediator in the directory of the **Alert** application, the file name being required to have the format: "M_XXXXXX.DLL, with "XXXXXX" a string identifying the mediator.

- The **Setup** button gives access to a dialog box to configure the selected mediator. It is grayed if there is no mediator selected or if the selected mediator does not propose a setup service.

- The **Initialize** button commands the reinitialization of the mediator module. It is grayed if there is no mediator selected.

- The **Message processor activation** option activates, when checked, a mediator for message processing (message processor). If the message processor is not installed, this option is grayed. When the message processor is active, it can be configured by the command **Message processor...** in the **Configuration** menu.

Polling parameters

- The **Timeout before start polling** value defines the timeout between start-up of the application (with launching of external applications) and the establishment of the connections with the supervised applications. This timeout allows the completed initialization of external applications to be awaited before soliciting them.

- The **Timeout to restart polling** value defines the timeout initialized when the connection with an external application is broken before trying to automatically restore it. This timeout will be retriggered until the reestablishment of the connections.
  If this value is null, there is no automatic reestablishment of the connections.

- The **Timeout on request response** value defines the maximum delay for waiting for a response to explicit DDE or OPC requests. These requests are transmitted to all the events to watch, first at the establishment of the connection, then periodically for the events defined with the "periodic request" option. If this timeout is null, requests are done in synchronous mode (blockage while waiting answer).

- The **Polling cycle (Periodic Request)** value defines the polling period to read the events set with the "periodic request" option. At the end of this period, all the events defined with this option are submitted to an explicit DDE or OPC request, to control that the supervised application is still responding.

- The **Initial DDE Request on Advise** option forces at the connection time an initial request for the DDE type tags declared in polling to recover their current value.
  This option must be validated if the DDE server of the supervised application does not provide an initial value in return of advise command (the server transmits the value only to the next change).
  It must be invalidated if the DDE server of the supervised application returns incoherent values on an explicit request after starting ADVISE transaction, while the tag value has not been acquired by the server.

- When the option "Initial DDE request..." is validated, the **Request before Advise** option specifies that the DDE request must be performed before the DDE advise.

- When the **Link failure on invalid tag value** option is activated, a link failure is set on tags with invalid values despite a successful link. (For example: a bad quality in OPC)

---

[26] A mediator module is a DLL module which takes charge of the data exchanges between the ALERT software and the supervised application.

Server item receiving the event log

This option designates an item in an external DDE or OPC server application that will receive the trace of the events logged by ALERT (user login, alarms, acknowledgments ...).

This reference can be directly typed or browsed by clicking on the button on the right of the edit field.

To disable the event transmission to an external variable, you just have to erase the reference of the defined variable.

The events logged by **Alert** are transmitted to the selected DDE variable under the form:

"Event code" <Tab> "Parameters"

(See the Event coding table on the following page).

Watch Dog item

This option defines an item in an external DDE or OPC server application which will be then cyclically written with the value of a counter incremented at each cycle. This item could be tested by the external application to check that its contents changes according to the parameterized cycle, and so control that the alarm manager is still running.

This reference can be directly typed or browsed by clicking on the button on the right of the edit field.

- The **Cycle** parameter defines the period of the writing cycle of the designated item, in seconds. A null value disables the watch dog processing.

- The **Modulo** parameter defines the maximal value of the transmitted counter. When this value is reached, the counter is reset to zero.

- The **Format** parameter defines the value which will be written in the designated "watch dog" item. By default the write format contains only the counter value, coded under the form "&C". The format string can include any other numerical or alphanumeric string, and also tab characters that must be coded under the form "&T".

To disable the watch dog processing, you just have to erase the reference of the defined "watch dog" item or to set the write cycle to zero.

Code	Parameters	Meaning
0	-	Application initialization
1	-	Application closure
2	<operator>	User login
3	<operator>	User logout
4	<operator> (<port>:<driver>)	Outgoing call for message
5	<operator> (<port>:<driver>)	Outgoing call for alarm
6	<operator>	Advised operator
7	<operator>	Unadvised operator
8	<operator>: <cause>	Call failure
9	<alarm message>	Alarm
10	<alarm message> / <operator>	Alarm acknowledgment [27]
11	<alarm message>	Alarm reset
12	<operator> / <operator>	Call acknowledgment [28]
13	<alarm message>	Simple event
14	<operator> (<port>)	Incoming call
15	<on-call group>	Group call succeeded
16	<on-call group>	Group call failed
17	<on-call group> (-> <team>)	Schedule derogation [29]
18	<on-call group>	End of schedule derogation
19	-	System date modified
20	<operator> (<port>)	Login from a remote terminal
21	<port>	End of communication on a port
22	<port>	Port failure (modem)
23	<reference of server or item>	Link failure
24	<information>	Information message
25	<operator>	Operator set off duty
26	<operator> / <substitute>	Operator substituted
27	<alarm reference > / <operator>	Set of alarm mask
28	<alarm reference> / <operator>	Reset of alarm mask
29	<port>	Connection established on a port
30	-	Alert management deactivation in redundant mode
31	-	Alert management reactivation in redundant mode
32	<operator>	End of remote session
33	<error description>	Error
34	<operator>	Operator set on duty
35	<operator> / <operator>	Call denied (negative call acknowledgment) [2]
36	Group <G>, team changeover <A> -> <B> / <operator>, max delay <n> minutes	Team changeover team A to team B in group G [30]
37	Group <G>, team changeover <A> -> <B>	Team changeover failed team A to team B in group G (timeout expired) [4]
38	Group <G>, team <E> / <operator>	End on-call time group G team E

Event coding

---

[27] If the acknowledgement is issued from an external application, without identification of operator, the part "/ operator" is omitted.
[28] If the call is acknowledged by the called operator himself, the part "/ operator" is omitted.
[29] If no team is defined in derogation, the part "(-> team)" is omitted.
[30] If 1st changeover, the part "<A>" is suppressed, if default delay, the part ", max delay…" is suppressed.
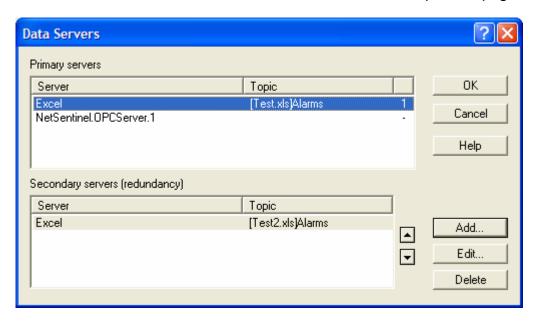
7.2.1 Secondary DDE Servers

To access to the configuration of the secondary DDE servers, select the **Options...** command of the **Configuration** menu, then, on the displayed dialog box, select the **Supervision** tab. Then click on the **Data Servers...** button on the top of the page.

This dialog box defines a list of secondary (redundant) servers for each DDE or OPC server referred to in the polling list. In normal time, the DDE and OPC connections are established with the primary servers. In case of disconnection of a primary server, the connection is automatically reestablished with the first available secondary server in the list of the secondary servers associated with.

Primary servers

This list displays the list of the DDE and OPC servers which are referred to in the polling list, whether they are on the local station or any network station.

The **Topic** column is used only for DDE servers.

The last column displays the number of secondary servers associated with.

Secondary servers

This list displays the list of secondary DDE and OPC servers associated with the server selected in the list "Primary channels". These servers will be requested, in case of failure of the associated primary server, in accordance with the order defined in the list.

Button *Add...*

Click on this button to add a new secondary server in the list of secondary servers associated with the server selected in the list of primary servers. The displayed dialog box allows the selection of a computer (a network station), a server and a topic.

Button *Edit...*

Click on this button to modify the definition of the secondary server selected in the list of secondary servers. The displayed dialog box allows the modification of the computer (the network station), the server and the topic.

Button *Delete*

Click on this button to remove the selected secondary server from the list of secondary servers.
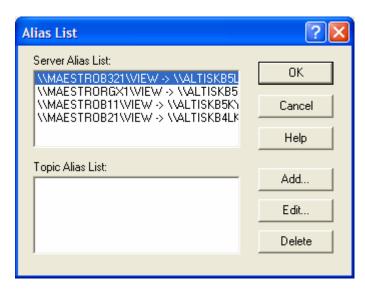
Buttons ▲ and ▼

Use these buttons to respectively move up and down the secondary server selected in the list of secondary servers. The secondary servers are used in accordance with the order defined in the list.

7.2.2 Definition of alias names

To access to the configuration of the supervision options of the application, select the **Options...** command of the **Configuration** menu, then, on the displayed dialog box, select the **Supervision** tab. Then click on the **Alias...** button on the top of the page.

DDE alias names can be used to replace the server or topic names in a DDE reference name. This allows the same name to be used to reference different servers or topics in redundant configurations.

Server Alias List

This list contains the alias names defined for the DDE servers, under the form:

> *<alias name> -> <DDE server> (list of topics attached to the server)*

Topic Alias List

This list contains the alias names defined for the DDE topics, under the form:

> *<alias name> -> <DDE topic>*

Button *Add...*

Click on this button to create a new server or topic alias (see below).

Button *Edit...*
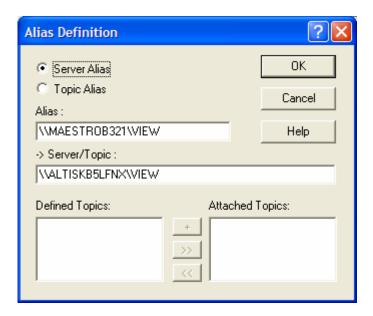
Click on this button to edit the properties of the alias selected in the server alias list or the topic alias list (see below).

Button *Delete*

Click on this button to delete the alias selected in the server alias list or the topic alias list.

7.2.2.1 Alias definition

Option _Server Alias_

Association of an alias name with a DDE server name and definition of a list of attached topics.

Option _Topic Alias_

Association of an alias name with a DDE topic name.

Alias

This field contains the name of the defined alias.

Server/Topic

This field contains the name of the DDE server or DDE topic (according to the above selection) referenced by the alias name.

Defined Topics

This list displays the topic aliases that have been defined.

Attached Topics

This list displays the topic alias attached to the defined server alias name. This list is only valid when the defined alias is a server alias.

The list of topic alias attached to a server allows the topic list to be predefined when the server alias is selected during the definition of a DDE reference.

Button +

This button adds the topic alias defined in the Alias field to the Topic list.

Button >>
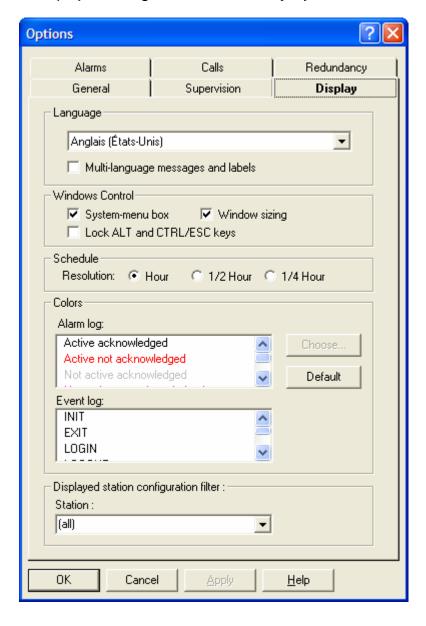
This button adds the topic selected in the Topic list to the Attached Topic list.

Button <<

This button deletes the topic selected in the Attached Topic list.

7.3 Display options

To configure the display options, select the **Options...** command of the **Configuration** menu, then, on the displayed dialog box, select the **Display** tab.

Language

- Selection of the **language** of the user interface (menus, dialogs, messages, help, etc). The defined language will be taken into account from validation by clicking the **OK** button.

- Validation of the **multi-language management of messages and labels**.

  When the multi-language management is validated, the messages and labels can be defined in several languages in order to be transmitted in the language of the called user. See § 8.4 "*Multi-language management*".

Windows Control

- The **System menu box** option validates the display of the "system menu" box on the left of the title bar of the main window. This option will have effect only after restarting the application.

- The **Window sizing** option validates the display of the sizing controls of the main window (buttons to minimize and maximize windows, sizing frame). If this option is not selected, the window is full screen and can be neither adjusted nor moved. This option will have only after restarting the application.

- The **Lock ALT and CTL/ESC** option validates the locking of the Windows commands to switch the tasks (ALT/TAB, CTRL/ESC). This option forbids any user to switch to another Windows application.

Schedule

- Selection of the **resolution** used in the **on call schedule**.

  When the resolution is decreased (1/4h -> 1/2 h -> 1 hour), a confirmation message is displayed to warn the operator that the schedule is likely to be modified (extension of time periods not aligned for the new resolution).

Colors

- **Customization of colors** representing the types of events in the event log and the state of alarms in the alarm table.

  Select an alarm state from the **Alarm log** list or a type of event from the **Event log** list then click on the **Choose...** button. Select the desired color in the displayed palette.

  The **Default** button restores the default configuration of the colors associated to alarm states and events.

Displayed station configuration filter
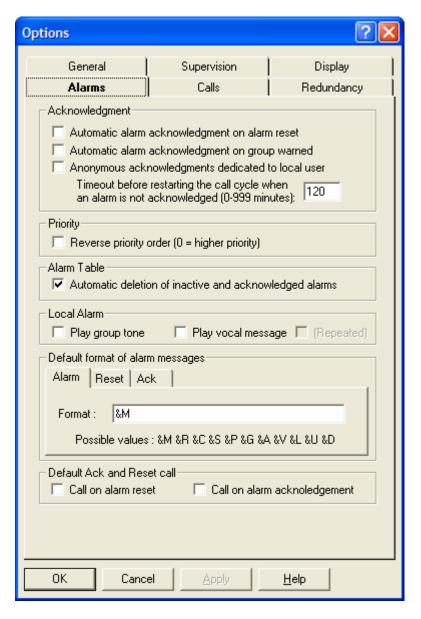
- **Selection of the station** to view.

  This selection is only enabled when the local station (first station) is defined as a "Centralization station". Only the "ALERT" stations (stations defined with a user having the station name and associated with an ALERT communication driver) are proposed in the list. The choice "(all)" gives access to the data of all stations.

  If a station is selected, the name of the selected station will be displayed in the status bar on the bottom of the main window, and only the data of this station will be accessible: configuration data for on-call management and supervision, on-call schedule, alarm table, alarm history and event log.

7.4 Alarm options

To configure the alarm management options, select the **Options...** command of the **Configuration** menu, then, on the displayed dialog box, select the **Alarms** tab.

Acknowledgment

This group defines the options associated with alarm acknowledgment:

- **Automatic alarm acknowledgment an alarm reset**. This option enables the automatic acknowledgment of an alarm by solving the problem which produced the alarm. This option can be redefined at the level of each alarm.

- **Automatic alarm acknowledgment on group warned**. This option enables the automatic acknowledgment of an alarm when the concerned group is warned. This option can be redefined at the level of each alarm.

- **Anonymous acknowledgments dedicated to local user**. This option allows anonymous acknowledgments (transmitted by a SCADA for example) to be identified by attributing them to the user who is locally logged.

- **Timeout before restarting the call cycle when an alarm is not acknowledged**. This parameter defines the maximum time to acknowledge an alarm. This number can be between 0 and 999 minutes, the value 0 canceling all delay (no obligation to acknowledge the alarm). When this time expired (if the alarm has not been acknowledged meanwhile), the call cycle is restarted towards the team which is on duty at that moment.

Priority

This group defines the priority management:

- **Reverse priority order**. This option defines the priority order. When this option is not checked, the 0 priority is the lower priority. When this option is checked, the 0 priority is the higher priority.

Alarm Table

This group defines the options associated with the alarm table:

- **Automatic deletion of inactive and acknowledged alarms**. When this option is checked, alarms are automatically removed from the alarm table when they are both acknowledged and not active.

Local Alarm

This group defines the local sound treatment of the alarms:

- **Play group tone**. This option validates the local emission of the characteristic sound message of the concerned on call group when an alarm is detected. If several groups are attached to an alarm, the played file will be the file of the first group defined in the list of the attached groups.

  Note: This option is validated for all the defined alarms attached to an on-call group having a sound file configured. It is also possible to play a sound file for a specific alarm by defining a "Play Tone" action for this alarm.

- **Play vocal message**. This option validates the local emission of the audio message attached to an alarm when an alarm is detected. This emission will follow the emission of the group sound message, if this emission is validated. If the **(Repeated)** box is checked, the message will be played in a continuous loop until the alarm acknowledgment.

  Note: This option is validated for all the defined alarms in the polling list. It is also possible to play the alarm message on the local station for a specific alarm by defining a "Play vocal message" action for this alarm.

Default format of alarm messages

This group defines the default format to use for the alarm messages (and reset or acknowledgment messages) that do not have specific format associated with.

The message **format** defines a composite message that will be created at the event time of the concerned alarm, reset or acknowledgment. It can contain some invariant parts, reproduced as they are, and some variable parts, that make reference to alarm parameters, by using the following syntax:

&M   This field will be replaced by the alphanumeric message defined for the tag

&R   This field will be replaced by the tag reference (DDE reference or other)

&O   This field will be replaced by the tag object identifier (OID)

&C   This field will be replaced by the numeric code defined for the tag

&S   This field will be replaced by the name of the station attached to the tag.

&P   This field will be replaced by the value of the priority of the tag

&G   This field will be replaced by the name of the basic alarm group associated with the tag

&A   This field will be replaced by the name of the call group associated with the tag

&V   This field will be replaced by the value of the tag at the alarm time.

&V*   This field will be replaced by the current value of the tag.

&L   This field will be replaced by the name of the station attached to the tag, if the station is not the local station.

&U   This field will be replaced by the name of the user who acknowledges the alarm.

&D   This field will be replaced by the date and time of the alarm with the format "MM/DD/YY HH:MM/SS"

If no default format is defined, the equivalent format will be "&M" to display the alarm message, if this last is defined, or "&R" to display the tag reference if the alarm message is not defined.

Default Ack and Reset call
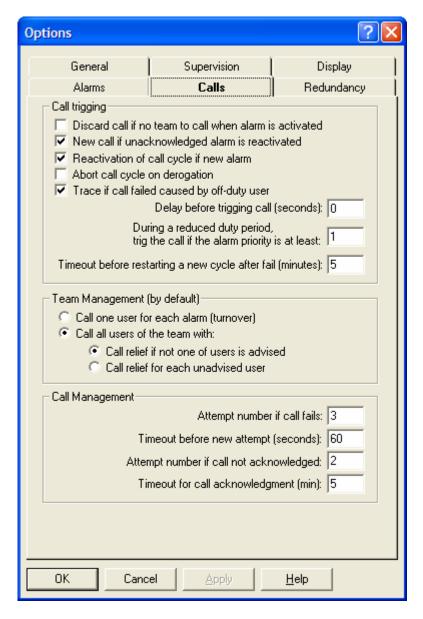
This group defines the default call options on event reset and alarm acknowledgment. These options can be redefined at the level of each tag.

- **Call option on alarm reset**. If this option is checked, the reset of alarms for those the call option on event reset has not been specifically redefined will trigger a call to the attached group.

- **Call on alarm acknowledgment**. If this option is checked, the acknowledgment of alarms for those the call option on alarm acknowledgment has not been specifically redefined will trigger a call to the attached group.

In the both case, only operators having the corresponding call option will be called.

7.5   Call options

To configure the call management options, select the **Options...** command of the **Configuration** menu, then, on the displayed dialog box, select the **Calls** tab.

Call trigging

This group defines the options attached to the call trigging conditions:

- **Discard call if no team to call when alarm is activated**. This option defines the behavior of the Alert manager when an alarm is triggered during a period where there is no team to call (no active team in the schedule or group in derogation state without derogation team).

  If this option is validated, the alarm is recorded in the alarm table, but the call is discarded. To the next valid on-call time period (or when exiting derogation state), there will be no call for alarms already registered, that they are acknowledged or no.

  If this option is not validated, the alarm is recorded in the alarm table with the corresponding call request. To the next valid on-call time period (or when exiting

derogation state), the call will be automatically triggered, except if the alarm in question were acknowledged meanwhile.

- **New call if unacknowledged alarm is reactivated**. This option allows a new call to be retriggered when an unacknowledged alarm is reactivated. If this option is not selected, an unacknowledged alarm will not provoke a new call if it is reactivated after a return to the normal state. This option is checked by default.

- **Reactivation of call cycle if new alarm**. When this option is checked, the apparition of a new alarm reinitialize the call cycle of the concerned group. This option ensures that all new alarm will be signaled to operators even if they have been already called. This option is checked by default.

- **Abort call cycle on derogation**. When this option is checked, the derogation command for a group immediately aborts the current call cycle of the group. By default, this option is not checked.

- **Trace if call failed caused by off-duty user**. This option validates or not the trace in the event log of the call fails that are consecutive to the call of an off-duty operator. When the on-call management is controlled from the supervised application by the modification of the on-duty status of operators, it is preferable to uncheck this option to avoid useless information in the event log.

- **Delay before trigging call**. This parameter defines the waited timeout (in seconds) before trigging a call when an alarm is detected.

  This timeout allows the alarm to be immediately treated by a local operator before starting of the call cycle. By default, this time is 0 (no delay to trigger the call).

- **During a reduced duty period, trig the call if the alarm priority is at least**. This value defines the minimum level of alarm priority to start a call during a "reduced duty" period. When an alarm has a priority level lower than this value, its activation during a "reduced duty" period for the concerned group will not induce an immediate call. This call will be delayed until the end of the reduced duty period, except if the alarm has been acknowledged meanwhile.

- **Timeout before restarting a new cycle after fail**. This parameter defines the waited timeout (in minutes) at the end of a call cycle when this cycle did not succeed (including the call of relief operators) to restart the cycle. If meanwhile the on-call team changed, the call will be performed to the new team.

  By default, this time is 5 minutes. If this time is null, there is not resumption of the cycle in case of failure (except at the end of the acknowledgment timeout if it is not null).

Team Management

This group defines the default options for the management of the teams:

- Selection of the team management mode:
  - **Call one user for each alarm**, different for every alarm (operator turnover)
  - **Call all active users of the team** (call broadcasting), with management of relief operators according to options below.

- Definition of the call conditions for relief operators (only for call broadcasting):
  - **Call relief if not one of user is advised**: a relief operator is called when none of the main operators of the team has been successfully reached (assures that at less one operator is warned).
  - **Call relief for each unadvised user**: a relief operator is called every time a team's operator cannot be reached (assures that a constant number of operators are warned).

Call Management

This group defines the default treatment options for call failures:
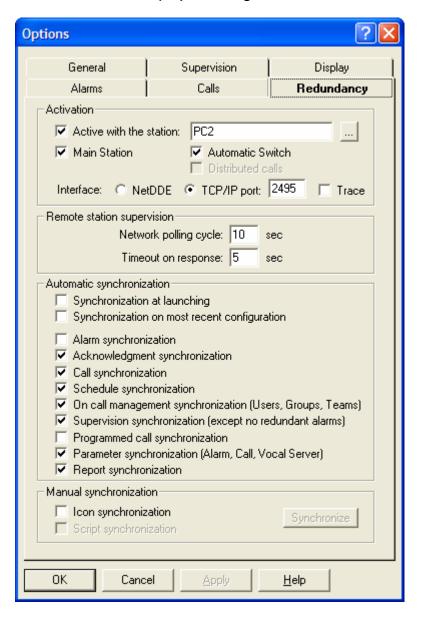
- **Attempt number if call fails**: maximum number of call attempts to the number when the call failed (no answer, busy ...). This number can be between 1 and 9.

  The time waited to try a new call depends on the type of failure. In case of no answer or busy failure, this time is that indicated by the parameter below ("timeout before new attempt"). It is reduced to 1 second if the modem does not detect the dial tone.

- **Timeout before new attempt**: time delay waited after a call failure (no answer or busy) to try a new attempt, in seconds. By default, this time is 60 seconds.

- **Attempt number if call not acknowledged**: maximum number of calls of a number when the call succeeded but the operator did not acknowledge the call within the defined delay. This number can be between 1 and 9.

The call can be acknowledged locally or remote by telephone, by SMS or from a client station.

- **Timeout for call acknowledgment**: time delay waited for call acknowledgment when the called operator has been reached, but without certainty (SMS, beeper, pager). This delay can be between 0 and 99 minutes, the value 0 canceling any delay (the call then always is considered as acknowledged).

7.6   Redundancy options

To configure the redundancy options, select the **Options...** command of the **Configuration** menu, then, on the displayed dialog box, select the **Redundancy** tab.

Activation

This group defines the functioning of the application in redundant mode.

- The **Active with the station** option validates, when checked, the redundant mode with the station defined in the adjacent field (name of a computer on the network functioning in redundancy with the local station). This name can be directly entered in the field or selected among the active computers of the network by clicking on the adjacent button ⬚. If the "TCP/IP" interface is selected, an IP address can be directly typed to designate the redundant PC.

- The **Main Station** option defines the operating mode of the 2 redundant stations. The main station is the station that will be active when the 2 stations will normally function. So that the redundant mode functions correctly, it is necessary to define one of the 2

stations like main station (checked option) and the other station like secondary station (option not checked).

- When the **Automatic Switch** option is checked (default option), the switching between the 2 stations is automatic when the active station goes to failure. Uncheck this option if you wish to control this switching from the external application.

- When the **Distributed calls** option is checked, the calls are distributed between the 2 stations. If the main station does not have any available port for the type of call to perform, it automatically delegates the call to the other station.

  When this operating mode is chosen, switching between the stations is not necessary (Automatic Switch option not checked).

- The **Interface** radio buttons select the interface to use to manage the redundancy between the 2 stations (control and synchronization): **NetDDE** or **TCP/IP**. When the TCP/IP network protocol is installed on the 2 redundant PC's, it will be preferable to use this interface that is more efficient than NetDDE.

  When the TCP/IP interface is selected it is possible to modify the number of the port used for the TCP/IP exchanges between the redundant stations. This number has to be modified only when the default proposed port (2495) is already used by another application on one of the redundant stations

  The selected TCP/IP port is this that will be used for the exchanges with the client stations.

Remote station supervision

This group defines the parameters of the polling cycle of the remote station:

- The **network polling cycle** defines the polling period of the remote station.

  If the "NetDDE" interface is selected, a request is performed by NetDDE for the "AlertLock" item of the remote station, at each period expiry.

  If the "TCP/IP" interface is selected, a TCP/IP link control is performed at each period expiry.

- If the "NetDDE" interface is selected, the **timeout on response** defines maximum delay for waiting for a response to the periodic request for the "AlertLock" item. If no answer is received to the expiry of this timeout, the remote station is declared in failure.

  If the "TCP/IP" interface is selected, this value defines the general timeout for waiting answer to each protocol request.

Automatic synchronization

This group defines the synchronization options of redundant stations and enables or not the synchronization of alarms, acknowledgments and configuration between the 2 stations:

- **Synchronization at launching**: when this option is checked, the configuration of the remote station (declared in redundancy) is automatically retrieved when the application is launched.

- **Synchronization on the most recent configuration**: when this option is validated, the dates of modification of the synchronized data between the redundant stations are compared to determine the values to keep for the synchronization. That option is especially useful during the automatic synchronization at launching when the configuration of each station has been modified on the both stations.

- **Alarm synchronization**: alarms detected on a station are automatically reported to the other station.

When the supervised application is redundant, this option is not necessary insofar as alarms are signaled on each station by their respective instance of the redundant application. However, that option can increase the efficiency of the redundancy insofar as it gives the possibility to continue to call for alarms from the other station in case of simultaneous failure of links on a station and communication ports on the other station.

- **Acknowledgment synchronization**: the call and alarm acknowledgments performed on a station are automatically transmitted to the other station.

  When this option is checked, the alarm masking and unmasking are also synchronized.

- **Call synchronization**: the call progression status on the active station is automatically transmitted to the other station.

- **Schedule synchronization**: any modification of the schedule table of a group is automatically transmitted to the other station.

- **On call management synchronization**: any modification of the on-call organization (operators, groups, teams, derogation...) is automatically transmitted to the other station.

- **Supervision synchronization**: every modification of the tag list to supervise is automatically transmitted to the other station. The tags declared as no redundant are not transmitted.

- **Programmed call synchronization**: any modification of the programmed calls and calls for synchronization with the remote stations is automatically transmitted to the other station.

- **Parameter synchronization**: any modification of working parameters is automatically transmitted to the other station: alarm parameters, call parameters, working of the vocal server (messages and parameters).

- **Report synchronization**: any modification of the logbook is automatically transmitted to the other station.

<u>**Manual synchronization**</u>

The following synchronizations are only performed on request, from the local station, by clicking on the **Synchronize** button.

- **Icon synchronization**: selection of the synchronization of icons defined in the tree of the main screen.

- **Script synchronization**: selection of the synchronization of scripts and parameters of the message processor.

7.7   Vocal server configuration
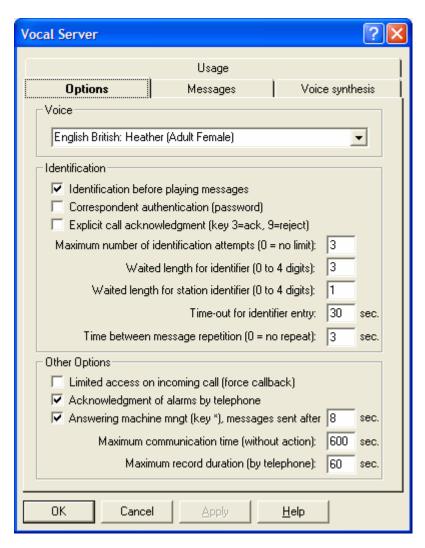
To configure the working of the built-in vocal server of **Alert** for telephonic vocal communications, select the **Vocal Server…** command of the **Configuration** menu.

The displayed dialog box contains 4 tabs:

- **Options**: configuration of the general options of the vocal server.
- **Messages**: definition of messages used by the vocal server and vocal messages attached to the tag groups.
- **Voice synthesis**: configuration of the voice synthesis (this tab is only displayed when the voice synthesis option is installed).
- **Usage**: selection of the telephonic keys used by the vocal server.

7.7.1   Vocal Server options

The **Options** page of the **Vocal Server** dialog box displays the general options of the vocal server.

Voice

The dropdown list selects the voice used by the vocal server voice. This selection also defines the vocal server language.

Identification

These parameters define options for the identification of the called or calling operator.

- **Identification before playing messages**

  When this option is checked, the called or calling operator must identify himself with his identification code (ID of the user file) to be able to listen to messages which are intended to him. This option is validated by default.

  If this option is not checked, all the alarm messages (unacknowledged or active alarms) are transmitted after the welcome message. The operator has the choice to identify himself to acknowledge the call. If the operator does not enter his ID code, the call is considered as failed.

- **Correspondent authentication**

  This authentication means the user access code (0 to 4 digits) is required during voice communications after user identification.

- **Explicit call acknowledgment**

  When this option is checked, the call has to be explicitly acknowledged or refused by the called operator (or calling operator for received messages to acknowledge):

  - Key 3: to accept the call (call acknowledgment)

  - Key 9: to refuse the call and ask for its reiteration to a relief operator.

- **Number of identification attempts (3 by default)**

  This number defines the maximum number of attempts authorized for the entry of the identifier code (ID) code or the password when accessing by telephone. When the called or calling user exhausted his number of attempts without having entered a valid code, the telephone line is automatically hang up.

  If this value is null, the number of attempts is unlimited.

- **Identifier waited length**

  This value defines the number of digits waited to identify the operator (0 to 4, 3 by default).

  If this value is null, the identification procedure is suppressed. The operator immediately has access to all commands of the vocal server.

- **Station identifier waited length**

  This value defines the number of digits waited to identify the station (0 to 4, 0 by default).

  If this value is null, the station identification procedure is suppressed. This identification is needed only on the centralization stations. The operator must enter the identifier of the station followed by his own identifier.

- **Time-out for identifier entry**

  This time can be between 10 and 180 seconds. When this timeout expires without having received a valid user identifier, the telephone line is automatically hang up.

- **Time between message repetitions**

  If the option "identification before playing messages" is validated, the **welcome message** is cyclically repeated with a pause between each transmission that corresponds to the value specified here.

If the option "identification before playing messages" is not validated, the **alarm messages** are cyclically repeated with a pause between each transmission that corresponds to the value specified here.

The value 0 invalidates the repetition process.

<u>Other options</u>

- **Limited access on incoming call (force call-back)**

  When this option is checked, it is impossible to connect from a remote terminal or to acknowledge alarms by telephone during an incoming call. It is obligatorily necessary to be called following an alarm or a callback request (by key "6"), to be able to use the terminal server or the acknowledgment command by telephone.

- **Acknowledgment of alarms by telephone**

  When this option is checked, the operator can listen to alarms one by one (key "7") and acknowledge the last listened alarm by pressing the key "8".

- **Answering machine management (key *)**

  This option validates the automatic recording of messages on a vocal answering machine (answering machine or GSM mail service).

  When this option is checked, the software will interpret the receipt of the DTMF code of the key "*" (before all other code) like a request to abort the identification procedure. In this case, alarm messages are transmitted at the end of the defined timeout then the line is disconnected. The following call number is then directly called. If the timeout value is null, messages are not transmitted and the following number is called immediately.

  This function can be used to automatically detect that the call reached an answering machine. To do that, one only has to insert the DTMF code of the key "*" at the end of the announcement message of the answering machine (by pressing the key "*").

- **Maximum communication time (without action)**

  This value defines the maximum duration of a telephone communication without any action of the operator (key stroke).

  After this time, the communication is automatically aborted. The timeout avoids an unlimited communication in case of deficiency of the modem watchdog or if the busy tone cannot be detected.

  The value 0 suppresses all limitation.
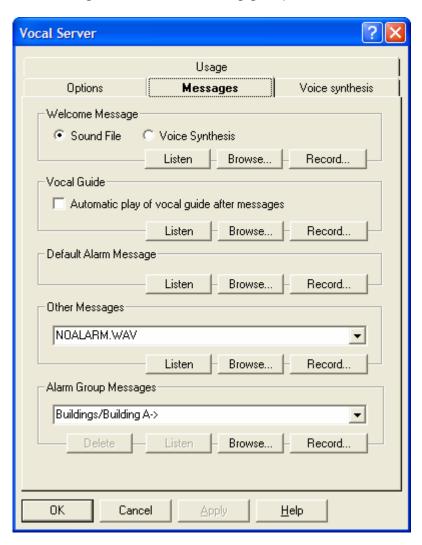
- **Maximum record duration**

  This value defines the maximum duration of a telephone recording. After this time, the recording is automatically stopped.

  The value 0 suppresses all limitation.

7.7.2　Vocal Server messages

The **Message** page of the **Vocal Server** dialog box defines the messages used by the vocal server and the vocal messages associated with tag groups.

Welcome message

The welcome message is played at the beginning of a telephone communication to invite the user to identify himself.

When the voice synthesis option is installed, the welcome message can be either recorded or synthesized from a text message (Text To Speech), following the choused option:

- *Sound File*: 　the welcome message is recorded (file "greeting.wav").
- *Voice Synthesis*: 　the welcome message is synthesized from the text defined in the "Voice synthesis" page.

Click on the **Listen** button to listen to the selected welcome message.

Click on the **Browse...** button to browse files for a sound file containing a prerecorded welcome message. When a sound file is selected, its content is copied in the place of the current welcome message.

Click on the **Record...** button to record a new welcome message or edit the current welcome message.

Vocal Guide

The vocal guide explains the usage of the vocal server. It can be automatically played after the alarm and service messages (if the option "Automatic play of vocal guide after messages" is validated) or on explicit demand of the user (key "*").

The option **Automatic play of vocal guide after messages** validates the automatic play of the vocal guide after the initial transmission of the alarm and service messages.

Click on the **Listen** button to listen to the selected vocal guide.

Click on the **Browse...** button to browse files for a sound file containing a prerecorded vocal guide. When a sound file is selected, its content is copied in the place of the current vocal guide.

Click on the **Record...** button to record a new vocal guide or edit the current vocal guide.

Default Alarm Message

The default alarm message is played during telephone communications to signal alarms that do not have any defined vocal message (neither alarm message nor group message).

Click on the **Listen** button to listen to the selected default alarm message.

Click on the **Browse...** button to browse files for a sound file containing a prerecorded default alarm message. When a sound file is selected, its content is copied in the place of the current message.

Click on the **Record...** button to record a new default alarm message or edit the current message.

Other Messages

All the messages used by the vocal server can be defined. First select the message in the dropdown list to define the corresponding vocal message.

Click on the **Listen** button to listen to the selected message.

Click on the **Browse...** button to browse files for a sound file containing a prerecorded message. When a sound file is selected, its content is copied in the place of the current selected message.

Click on the **Record...** button to record a new message or edit the current selected message.

Alarm Group Messages

The vocal message associated with a tag group is used to designate the group in the vocal alarm messages. This message is played before the vocal message associated with the tag in alarm. If there is not vocal message associated with the tag, only the group message is played.

First select a group in the dropdown list to define the vocal message which will be associated with.

Click on the **Delete** button to delete the vocal message associated with the group selected in the list.

Click on the **Listen** button to listen to the message associated with the selected group.
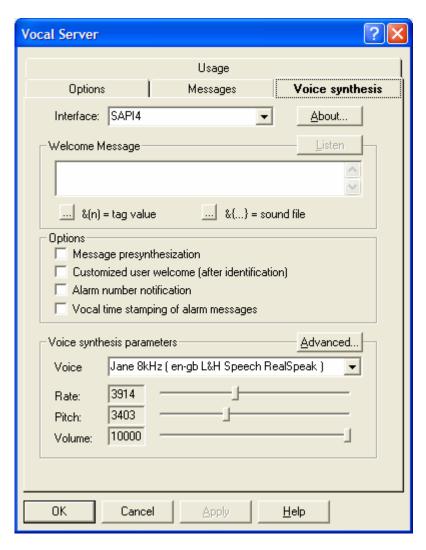
Click on the **Browse...** button to browse files for a sound file containing a prerecorded audio message.

Click on the **Record...** button to record a new message or edit the message associated with the selected group. The recorded sound file is stored in the subdirectory MESSAGE,

under the form of a "wave" file whose name is affected automatically with the "MGxxxx.WAV" format, "xxxx" being a numeric code between "0000" and "9999".

7.7.3   Voice synthesis

The **Voice synthesis** page of the **Vocal Server** dialog box defines the parameters of the voice synthesis. The tab to select this page is only displayed when the voice synthesis option is installed.

Interface

This dropdown list selects the Text To Speech interface to use.
When a TTS interface is selected, it is immediately initialized and the list of the voices that are available with the voice engines using this interface is updated.
When the choice "(none)" is performed, no voice engine is used.

Button About...

This button opens a dialog box giving information about the TTS engine attached to the selected voice. This button is grayed when there is no interface selected or if the engine attached to the selected voice does not provide this service.

Welcome Message

The welcome message can be synthesized at every vocal communication from the text entered in this field. This text can include sound files (that will be directly played) and values of tags of the supervision list.

To insert a sound file, click on the button **&{...} = sound file**, select the wanted file then validate. The name of the file is inserted in the edit field, to the current position of the cursor, under the form: & {name of file}.

To insert a tag value, click on the button **&(n) = variable value**, select the wanted tag then validate. The numeric identifier of the tag is inserted in the edit field, to the current position of the cursor, under the form: &(variable id).

To listen to the text typed in the field (with interpretation of the fields "file" and "variable") click on the **Listen** button.

Options

- **Message presynthesization**. When this option is validated, all the messages likely to be synthesized following an alarm (alarm messages, timestamp, number of alarms) are presynthesized at launching time.
- **Customized user welcome** after identification. When this option is validated, the operator is welcomed verbally after having identified ("Hello Peter Henry!").
- **Alarm number notification**. When this option is validated, the total number of alarms concerning the called or calling operator is vocalized before playing the alarm messages (after the connection or on operator request by the key "0").
- **Vocal time stamping of alarm message**. When this option is validated, the alarm message is synthesized with the hour of alarm detection vocalized before ("At 8h30...").

Voice synthesis parameters

The "**Voice**" dropdown list selects the voice to use. The list of available voices depends on the selected TTS interface.
When the voice is modified, the voice synthesis engine is immediately reset with the new voice.

The cursors can be used to adjust the voice synthesis:
- **Rate**   defines the elocution speed of the synthesis.
- **Pitch**   defines the tonality of the voice generated, low (high value) or high (low value).
- **Volume**   defines the sound level of the message generated.
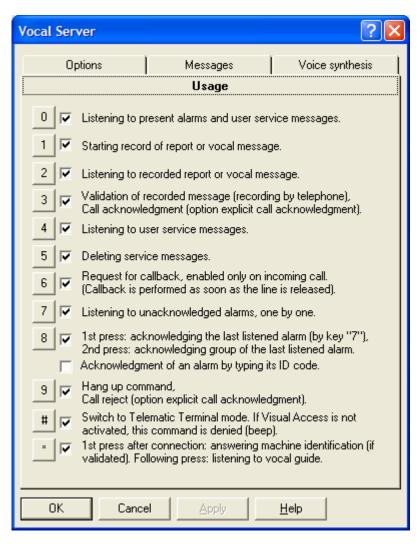
The "**Advanced...**" button gives access to the configuration of the advanced parameters of the TTS engine attached to the selected voice. This button is grayed when there is no interface selected or if the engine attached to the selected voice does not provide this service.

7.7.4 Usage of the vocal server

The **Usage** page of the **Vocal Server** dialog box defines the keys telephonic keyboard that will be used by the vocal server.

When the box associated with a key is not checked, the key in question is not interpreted by the vocal server. The interpretation of this key, when the box is checked, is defined by the associated text.

When the option **Acknowledgment of an alarm by typing its ID code** is checked, the alarm acknowledgment by telephone is performed by typing the key 8 followed by the identifier code of the alarm to acknowledge (code displayed in the title bar of the configuration dialog box of the alarm in question).

7.8   Toolbar customization

The tool bar supporting the command buttons can be customized by the addition or removal of buttons.

To access to the configuration of the toolbar, select the **Toolbar...** command of the **Configuration** menu.

The list **Toolbar contents** shows the buttons displayed in the current toolbar, with the associated menu command (eg: File:Logout = "Logout" command from the "File" menu). The "[Separator]" lines correspond to a half-button space on the tool bar.

1) To remove a button

Select the desired button in the list **Toolbar contents**, then click on the **Remove** button.

2) To modify a button

Select the desired buttons in the list Toolbar contents, then choose the new button from the list **Buttons** (it can be the same one) and the command associated with it from the list **Commands**. Click on the **Modify** button.

3) To insert a new button

Select in the list **Toolbar contents** the button before which one wants to insert the new button. Then choose the new button from the list **Buttons** and the command to be associated with it from the list **Commands**. Click on the **Insert** button.

The **Default** button restores the standard configuration of the application.

7.9   Communication log

By clicking on the **Monitor** button of the **Communication** dialog box, one can control in real time the data exchanged on a specific communication port on a line monitor screen.

On the monitor line screen, the transmitted frames are displayed in red, the received frames are displayed in green. The frames can be displayed in ASCII or hexadecimal.
The time between 2 consecutive frames is displayed on the left, in milliseconds.

The **Communication log** option of the **Communication** dialog box enables to record in a file the data transmitted and received on a port during a communication.

The name of the record file has the form "PORTx.LOG", x being the number of the concerned port. This file is recorded in the directory of the application and reset for each communication.

When a call doesn't succeed, the record file is saved with a name of the form "PORTx_n.LOG", x being the number of port concerned and n a number of 0 to 9 automatically incremented for each new file. When there are more 10 files of fail recording, oldest is replaced by the new.

The recording format is:

> "**S:**xxxxx**<CR><LF>**" for the character strings "xxxxx" transmitted

> "**R:**xxxxx**<CR><LF>**" for the character strings "xxxxx" received

The non displayable characters are represented by their mnemonic code between characters   "< >" (< CR >, < LF >,...) for codes between 00h and 1Fh and by their hexadecimal code between "< >" for codes between 80h and FFhs.

When transmitting audio data blocks (vocal communication) or fax data blocks (fax communication), data of each transmitted block are symbolized by the label < DATA >.

This option is useful only for diagnostic if a problem appears with the use of a particular communication driver. In normal situations it should not be activated.

8   APPENDIX

8.1   Vocal server

When a vocal telephonic communication is established, following an incoming or outgoing call, **Alert** first transmits a welcome message. This message can be used to identify the site for the correspondent and to invite him to identify himself. It can be cyclically repeated until the identification of the correspondent. If there is no welcome message defined, a welcome beep is transmitted.

The welcome message can be recorded (in local or by telephone) or, if the voice synthesis option is installed, synthesized from a text. If that case, the text can include some pre-recorded vocal messages and tags of the supervision list (see § 7.7.2 *"Vocal Server messages"*).

In standard working, **Alert** waits for the 3 or 4 digits[31] operator's code or for the command to switch in terminal mode (key "#"). The operator code is the one that is displayed in the "ID" field of the property dialog box of the operator. In case of error, press on the key "*" of the telephonic keyboard to cancel the entry, and then enter the code again.

As soon as a key is pressed, **Alert** stops the emission of the welcome message, what authorizes an experienced operator to immediately identify himself without having to wait for the complete transmission of the message.

When the code is entered and recognized, a 3 tones acknowledgment beep is transmitted. Otherwise, a message "invalid code" invites the operator to enter his code again.

If the "authentication" option is validated, **Alert** waits then for the access code of the operator (4 digits). Procedures of canceling and acknowledgment are the same.

At the end of the identification phase[32] (with possible authentication), and if there are messages pending for the operator or alarms not acknowledged or active concerning him, the corresponding messages are transmitted. Otherwise a message informs the operator that there are no alarms.

If there are more 10 pending alarms for the connected operator, only the 10 first messages (by decreasing priority order then reverse chronological order) are played. The maximum number of announced alarms (10 by default) is defined by the "maxalarm" parameter in the "vocal" section of Alert.ini file.

---

[31] The waited operator identifier can be shorted to 1 or 2 digits. It can even be suppressed (null length), in which case **Alert** doesn't manage any more identification procedure (vocal server opened to all public).

[32] By default (option "explicit call acknowledgment" not checked), the call acknowledgment which indicates that the operator was properly warned is implicit (automatic acknowledgment from the operator identification).

When the option "explicit call acknowledgment" is checked (see § 7.7.1 *"Vocal Server options"*), the call has to be explicitly acknowledged, either by pressing the key "**3**", that indicates a call acceptance, or by pressing the key "**9**", that indicates the call is refused and a reiteration of the call to a relief operator is required. If none of these actions was performed during the communication, the call in not acknowledged and therefore will be reiterated to the operator.

When all messages have been transmitted, a vocal guide can be transmitted automatically, to inform the operator on the possible actions. The automatic transmission of this vocal guide is optional.

 The operator has then access to the commands defined in the table of the following page.

Recording of a message or a report by telephone:

The built-in vocal server allows vocal messages and oral reports to be recorded by telephone.

In normal operating phase, the recording procedure produces oral reports that can be consulted from the logbook and that are automatically deleted at the end of a configurable time.

To record the vocal messages by telephone (alarms, welcome, guide), it is previously necessary to set the software in record mode, by selecting the **Record messages by telephone** entry in the **Configuration** menu: the "RECORD" indication is displayed in the fault indicator of the alarm status bar. After having recorded messages, the same command must be selected again to come back in normal operating mode.

To record a message (or a report) by telephone, once the telephonic connection established (after identification and listen to eventual messages):

- Press the key "**1**" and wait for the beep that signals that the application is ready to record. Enunciate the message, avoiding dead times. The record stops automatically as soon as a silence longer than the time defined in the configuration of the vocal driver (2 seconds by default) is detected. A new beep signals that the record is completed. This beep can be transmitted beyond operator's control if the record is aborted (receipt overflow).

- Press the key "**2**" to listen to the recorded message. If the quality of the message does not agree restart the recording by pressing again the key "**1**".

- Press the key "**3**" to validate the recorded message. The message is saved then under the MTxxxx.WAV name, in the "MESSAGE" subdirectory of the application, "xxxx" being a sequence number automatically incremented to each new message.

 In the case of recording of a report, the storage is done automatically in the "REPORT" subdirectory, at the end of the telephonic communication. It is not necessary to press the key "**3**".

Note:

To erase the silence at the end of a message, just assign the message to the wanted variable (or to the welcome or guide message), then click on the **Record...** button of the corresponding file group. In the recording dialog box, click on the button ▶ to listen to the message. At the end of the message, stop monitoring at the beginning of the silence time (button ■), then click on the button **Cut>>** to cut the end of the message. Listen again to the message, then validate by **OK** if the result agrees. If the operation degraded the message, cancel the operation by clicking on **Cancel**, then retry again.

KEY	FUNCTION
0	Listen to the 10[33] first no acknowledged or active alarms that concern the operator, in the decreasing order of priorities and reverse chronological order, the acknowledged active alarms at the end.
1	Record a message or a vocal report.
2	Listen to recorded message or vocal report.
3	➢ When the message recording is active, save the recorded message. "MTXXXX.WAV in the "MESSAGE" subdirectory) ➢ When the option "explicit call acknowledgment" is checked (see § 7.7.1 "*Vocal Server options*"), the call is accepted (call acknowledgment).
4	Listen to the service message that concerns the operator (mailbox).
5	Delete the messages in the operator's mailbox.
6	Callback request, only valid for incoming call. The demand is acknowledged by a message, then the call is triggered as soon as the operator has released the line.
7	Listen to no acknowledged alarms that concern the operator, one by one, in the decreasing order of priorities and reverse chronological order. Each time "7" is keyed, the following alarm is transmitted. A message signals the end of list. The next "7" command returns in beginning of list.
8	Acknowledgement of the last alarm that was transmitted following a "7" command. The acknowledgement is signaled by a message. If there was no alarm to acknowledge, or if the "acknowledgment of alarms by telephone" option was not validated (see § 7.7.1 "*Vocal Server options*"), or if the callback option was forced and the actual communication is an incoming call, a message is transmitted, indicating that the acknowledgment has been denied. A second pressure on this key provokes the acknowledgment of all alarms of the group of the selected alarm by the preceding "7" command. On option, the alarm acknowledgment can be directly commanded by pressing the key 8 then typing the identifier code of the alarm to acknowledge (see § 7.7.4 "*Usage of the vocal server*").
9	Command to release the line (no obligatory, hang up being automatically detected, but more slowly). When the option "explicit call acknowledgment" is checked (see § 7.7.1 "*Vocal Server options*"), the call is refused and a new call is immediately reiterated to a relief operator. If the "9" key is pressed consecutively two times (in a short time), the remote control procedure will be started (see § 8.5 "*Remote Control*").
*	First command following connection: identification of answering machine[34] Following commands: listen to the vocal guide.
#	Switch to terminal mode. If the terminal server **Visual Access** is not activated, this command is denied (message "terminal server out of order").

Available commands from the telephonic keypad

---

[33] This number is defined by the "maxalarm" parameter in the 'vocal' section of Alert.ini file.
[34] If the option management of answering machine is validated in the vocal server options (see § 7.7.1 "*Vocal Server options*").

8.2 Terminal / WAP server

Alert can be used in connection with the terminal server **Visual Access**.

To launch (and to close) automatically this application at the same time as **_Alert_**, it is necessary to define Visual Access like an external application (see § 5.20 "*External applications*"), with positioning options of automatic opening and closing. This configuration is done automatically at the installation time when one chosen to install Alert and Visual Access together.

```
        A L E R T              COMNEIGE

      On-call Managemer

  MICROMEDIA INTERNATIONAL




          Y o u r    n a m e  :  ...................
          Y o u r    c o d e  :  ....

              switch between fields  F2   F3    Validate  ENTER
                                                  Repeat    F4
```

Visual Access responds to calls of remote terminals (PC with terminal emulation, videotext terminal…), through its own communication ports or through ports shared with **Alert** (if the response mode is defined as "Terminal server" in the modem parameters). It can also be activated at the time of a vocal communication (on incoming or outgoing call) by pressing the key "**#**" of the telephonic keypad (see § 8.1 "*Vocal server*").

Visual Access interacts with **Alert** to offer the following services:

- Call acknowledgment (automatically after identification and authentication of the operator on the welcome page).
- Consultation of alarms and instructions associated with, acknowledgment and mask/unmask of alarms.
- Consultation of the event log.
- Consultation of service messages sent to the operator.
- Consultation of the file of the calling operator, with possible modification of call numbers and selection of the active and relief numbers.
- Consultation of the operator's schedule, from the current week until the last week of the 11th month.
- Recording of a write report to the logbook.
- Edition of the on call schedule (only by an operator belonging to a class of level 2).

Visual Access also allows a direct interaction with the supervised application through a configurable tree of screens:

- Menu screens, to browse through the tree.
- Synoptic screens, to visualize and control some variables of the application.

- Screens to display text files.

Visual Access offers at last the possibility of downloading files (to collect history for example) and uploading files (updating of software modules for example).

8.3   External database exportation

In order to extend the capabilities of the statistical treatment of alarms and calls, the application configuration and the alarm history, the call history (group and user calls) and the report log can be automatically exported to an external database.

To set this functionality operational, the database export option has to be authorized by the software license and the **Database export activation** option must be checked in the general option dialog box (see § 7.1 "*General options*").

The exported data can be dispatched into 2 distinct databases, one for the storage of the ALERT configuration and one for the history storage. The link with these databases is defined by the data link files "AlertDB_AlarmDef.udl" (configuration database) and "AlertDB_AlarmLog.udl" (history database). A unique database can also be used to store the whole configuration and history data.

To modify a link with a database, open the concerned file with the data source editor (by double-clicking on the file name) then modify the wished parameters.

The tables in the databases are automatically created at the application launching.

8.3.1   Configuration database

The configuration database contains al the configuration data that are useful for the utilization of history data. It is automatically updated after each modification of the corresponding configuration data. By default, it is a database in the Microsoft Access format located in the "Bases" subdirectory: "AlarmDef.mdb".

The configuration database includes the following tables:

- **STATIONS**: list of stations

Field name	Type	Description
StationId	Numeric	Station identifier
StationName	Text	Station name

- **GROUPS**: list of functional groups

Field name	Type	Description
GroupId	Numeric	Group identifier
GroupName	Text	Group ame

- **CALLGROUPS**: list of on-call groups

Field name	Type	Description
CallGroupId	Numeric	Group identifier
GroupName	Text	Group name
StationId	Numeric	Identifier of the attached station

- **TEAMS**: list of on-call teams

Field name	Type	Description
TeamId	Numeric	Team identifier
TeamName	Text	Team name
CallGroupId	Numeric	Identifier of the attached on-call group

- **TAGS**: list of supervised tags

Field name	Type	Description
TagId	Numeric	Tag identifier
StationId	Numeric	Identifier of the attached station
Label	Text	Alphanumeric identifier of the tag
GroupId	Numeric	Identifier of the attached functional group
CallGroupId	Numeric	Identifier of the attached on-call group
Message	Memo	Associated text message
Priority	Numeric	Tag priority

- **USERPROFILES**: list of user profiles

Field name	Type	Description
ProfileId	Numérique	Profile identifier
ProfileName	Text	Profile name
ProfileLevel	Numérique	Basic access level of the profile

- **USERS**: list of operators

Field name	Type	Description
UserId	Numeric	User identifier
UserName	Text	User name
UserFirstName	Text	User first name (can be NULL)
StationId	Numeric	Identifier of the attached station
UserNumericId	Numeric	Telephonic identifier o the user
ProfileId	Numeric	Identifier of the attached profile
LanguageId	Numeric	Code of the user language
UserType	Numeric	User type (1=virtual, 2=console, …)

- **DRIVERS**: list of installed communication drivers

Field name	Type	Description
DriverId	Numeric	Driver identifier
DriverName	Text	Driver name
DriverType	Numeric	Driver type (vocal, fax, SMS, …)
CountryCode	Text	Country code (2 characters, NULL is not localized)

- **CALLNUMBERS**: list of call numbers

Field name	Type	Description
NumberId	NumAuto	Call number identifier
UserId	Numeric	Identifier of the attached user
EntryNumber	Numeric	Entry number in he user directory
DriverId	Numeric	Identifier of the communication driver to use
Address	Text	Call number or address

- **CALLGROUPS_USERS**: table for assignment of users to on-call groups

Field name	Type	Description
CallGroupUserId	Numeric	Link identifier
CallGroupId	Numeric	Identifier of the attached on-call group
UserId	Numeric	Identifier of the attached user
Relief	Boolean	Relief indicator for operator in the group

- **TEAMS_USERS**: table for assignment of users to on-call teams

Field name	Type	Description
TeamUserId	Numeric	Link identifier
TeamId	Numeric	Identifier of the attached on-call team
UserId	Numeric	Identifier of the attached user
UserIndex	Numeric	Position of the user in the team
Relief	Boolean	Relief indicator for operator in the team

8.3.2   History database

The history database contains all the dynamic data recorded by the software: alarms, calls, reports. By default, it is a database in the Microsoft Access format located in the "Bases" subdirectory: "AlarmLog.mdb".

The history database includes the following tables:

- **ALARMLOG**: history of alarms

Field name	Type	Description
AlarmLogId	NumAuto	Identifier of the alarm event
TagId	Numeric	Identifier of the tag in alarm (cf. TAGS)
AlarmTime	Date/Time	Timestamp of the alarm activation
Message	Memo	Formatted alarm message
ResetTime	Date/Time	Timestamp of the alarm reset
UserId	Numeric	Identifier of the user who acknowledged the alarm (cf. USERS)
AckTime	Date/Time	Time stamp of the alarm acknowledgment
AlarmValue	Text	Tag value at the alarm time
CommentText	Mémo	Comment associated with the alarm

 The alarm history table is updated in real time for every alarm event (activation, reset, acknowledgment).

- **CALLGROUPLOG**: history of group calls

Field name	Type	Description
CallGroupLogId	NumAuto	Identifier of the group call
CallGroupId	Numeric	Identifier of the on-call group (cf. CALLGROUPS)
BeginTime	Date/Time	Timestamp of the begin of the call cycle
EndTime	Date/Time	Timestamp of the end of the call cycle
Status	Numeric	0 = no call performed 1 = call aborted before the end of call cycle 2 = call transmitted (wait for call acknowledgment) 3 = unwarned group (call cycle failed) 4 = warned group (calls acknowledged)

The call group table is updated at the beginning of the call cycle (EndTime and Status fields set to NULL) and at the end of the call cycle.

- **CALLLOG**: history of user calls

Field name	Type	Description
CallLogId	NumAuto	Identifier of the user call
UserId	Numeric	Identifier of the called user (cf. USERS)
DriverId	Numeric	Identifier of the used communication driver (cf. DRIVERS)
CallNumber	Memo	Called number
BeginTime	Date/Time	Timestamp of the begin of the call
EndTime	Date/Time	Timestamp of the end of the call
Status	Numeric	0 = no call performed 1 = call aborted 2 = call suspended 3 = call transmitted (wait for call acknowledgment) 4 = call failed 5 = call acknowledged 6 = call not acknowledged (failed)

The call table is updated at the beginning of the call (EndTime and Status fields set to NULL) and at the end of the call.

- **REPORTLOG**: report log

Field name	Type	Description
ReportLogId	NumAuto	Identifier of the report
ReportDate	Date/Time	Time stamp of the first report edition
UserId	Numeric	Identifier of the report author (cf. USERS)
TopicId	Numeric	Identifier of the report topic (cf. TOPICS)
ReportText	Memo	Report content
AudioFile	Text	Name of the attached audio file
AtachedFile	Memo	List of attached files
AlarmReport	Boolean	Indicator for alarm report

The report log is updated after each report edition (creation or modification).

- **REPORTTOPIC**: list of report topics

Field name	Type	Description
TopicId	NumAuto	Identifier
TopicTexte	Text	Topic label

The following tables contain the list of crossed references between the alarms and the consecutive group calls (ALRMTOCALLGROUP), between the group calls and the associated user calls (CALLTOCALLGROUP), and the alarms and the associated reports (ALARMTOREPORT).

- **ALARMTOCALLGROUP**: links alarms / group calls

Field name	Type	Description
AlarmToCallGroupId	NumAuto	Identifier
AlarmId	Numeric	Identifier of the alarm event (cf. ALARMLOG)
CallGroupId	Numeric	Identifier of the group call (cf. CALLGROUPLOG)

- **CALLTOCALLGROUP**: links user calls / group calls
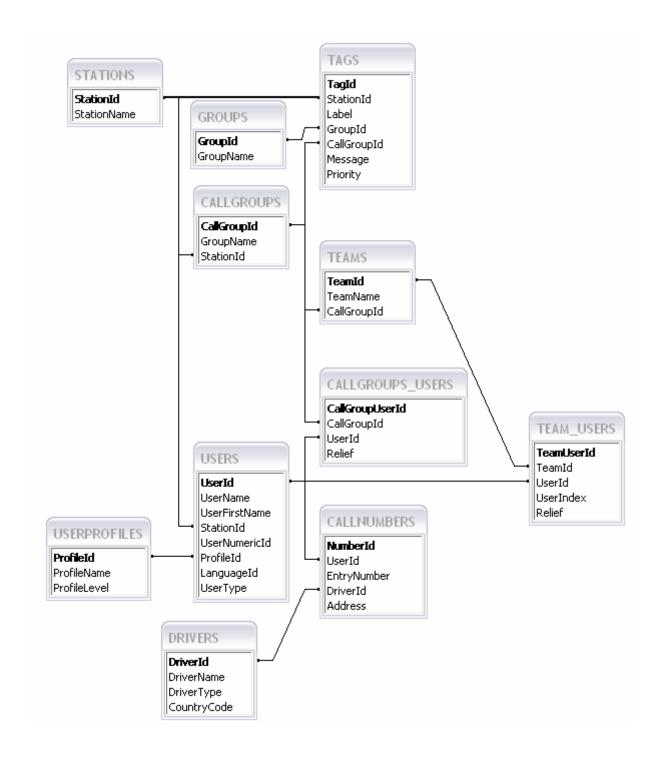
Field name	Type	Description
CallToCallGroupId	NumAuto	Identifier
CallId	Numeric	Identifier the user call (cf. CALLOG)
CallGroupId	Numeric	Identifier of the group call (cf. CALLGROULOG)

- **ALARMTOREPORT**: links alarms / reports
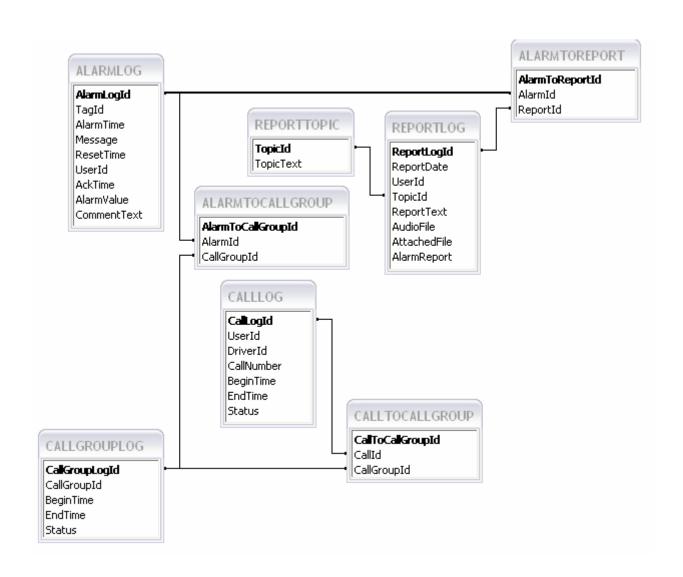
Field name	Type	Description
AlarmToReportId	NumAuto	Identifier
AlarmId	Numeric	Identifier of the alarm event (cf. ALARMLOG)
ReportId	Numeric	Identifier of the report (cf. REPORTLOG)

8.3.3   Database schemas

The relations between the different tables of the databases "AlarmLog" and "AlarmDef" are described by the following schemas:

STATIONS
- **StationId**
- StationName

TAGS
- **TagId**
- StationId
- Label
- GroupId
- CallGroupId
- Message
- Priority

GROUPS
- **GroupId**
- GroupName

CALLGROUPS
- **CallGroupId**
- GroupName
- StationId

TEAMS
- **TeamId**
- TeamName
- CallGroupId

CALLGROUPS_USERS
- **CallGroupUserId**
- CallGroupId
- UserId
- Relief

TEAM_USERS
- **TeamUserId**
- TeamId
- UserId
- UserIndex
- Relief

USERS
- **UserId**
- UserName
- UserFirstName
- StationId
- UserNumericId
- ProfileId
- LanguageId
- UserType

USERPROFILES
- **ProfileId**
- ProfileName
- ProfileLevel

CALLNUMBERS
- **NumberId**
- UserId
- EntryNumber
- DriverId
- Address

DRIVERS
- **DriverId**
- DriverName
- DriverType
- CountryCode

Relational schema of the configuration database

Relational schema of the history database

8.4   Multi-language management

The visual user interface of the software can be dynamically switched between 5 languages (see § 7.3 *"Display options"*): English, French, German, Italian and Dutch.
Its vocal interface can also be dynamically switched by selecting the voice of the vocal server (see § 8.1 *"Vocal server"*).

Since the version 3.4 of the software, the messages and labels (names of groups, teams, operators, formats…) can be defined in different languages.

To be operational, the multi-language management must be validated (see § 7.3 *"Display options"*).

The messages transmitted to an operator are automatically selected in his usual language. If the message does not exist in the language of the operator, it is selected in an available language, in the following priority order:

  ➢ In the language of the user interface,
  ➢ In US English,
  ➢ In the first available language of the message.

Through the software interface, the messages and labels are defined in the selected language of the user interface. The definition of messages and labels in supplementary languages must be performed by editing the corresponding text file: "MessList.csv" for the alarm messages, "LabelList.csv" for the labels.

These files can be edited by Excel (CSV format). Each line defines the message identified by the numerical code of the first column. Each following column contains the message in the language identified by the language code written in the first line of the corresponding column (see the table below). To create a new language, add a new column with the convenient language code on the first line and then translate the messages in every following line.

1078	Afrikaans	1081	Hindi
1025	Arabic (Saudi Arabia)	1038	Hungarian
2049	Arabic (Iraq)	1039	Icelandic
3073	Arabic (Egypt)	1057	Indonesian
4097	Arabic (Libya)	1040	Italian (Standard)
6145	Arabic (Morocco)	2064	Italian (Switzerland)
7169	Arabic (Tunisia)	1041	Japanese
8193	Arabic (Oman)	2144	Kashmiri (India)
9217	Arabic (Yemen)	1087	Kazakh
10241	Arabic (Syria)	1042	Korean
11265	Arabic (Jordan)	1062	Latvian
12289	Arabic (Lebanon)	1063	Lithuanian
13313	Arabic (Kuwait)	2087	Lithuanian (Classic)
14337	Arabic (U.A.E.)	1071	Macedonian
15361	Arabic (Bahrain)	1086	Malay (Malaysia)
16385	Arabic (Qatar)	2110	Malay (Brunei Darussalam)
1068	Azeri (Latin)	2145	Nepali (India)
2092	Azeri (Cyrillic)	1044	Norwegian (Bokmal)
1059	Belarussian	2068	Norwegian (Nynorsk)
1093	Bengali	1045	Polish
1026	Bulgarian	1046	Portuguese (Brazil)
1028	Chinese (Taiwan Region)	2070	Portuguese (Standard)
2052	Chinese (PRC)	1094	Punjabi
3076	Chinese (Hong Kong)	1048	Romanian
4100	Chinese (Singapore)	1049	Russian
5124	Chinese (Macau)	3098	Serbian (Cyrillic)
1050	Croatia	2074	Serbian (Latin)
1029	Czech	1051	Slovak
1030	Danish	1060	Slovenian
1043	Dutch (Netherlands)	1034	Spanish (Traditional Sort)
2067	Dutch (Belgium)	2058	Spanish (Mexican)
1033	English (United States)	3082	Spanish (Modern Sort)
2057	English (United Kingdom)	4106	Spanish (Guatemala)
4105	English (Canadian)	5130	Spanish (Costa Rica)
5129	English (New Zealand)	6154	Spanish (Panama)
6153	English (Ireland)	7178	Spanish (Dominican Republic)
7177	English (South Africa)	8202	Spanish (Venezuela)
8201	English (Jamaica)	9226	Spanish (Colombia)
10249	English (Belize)	10250	Spanish (Peru)
11273	English (Trinidad)	12298	Spanish (Ecuador)
12297	English (Zimbabwe)	13322	Spanish (Chile)
13321	English (Philippines)	14346	Spanish (Uruguay)
1061	Estonian	15370	Spanish (Paraguay)
1035	Finnish	16394	Spanish (Bolivia)
1036	French (Standard)	17418	Spanish (El Salvador)
2060	French (Belgian)	18442	Spanish (Honduras)
3084	French (Canadian)	19466	Spanish (Nicaragua)
4108	French (Switzerland)	1089	Swahili (Kenya)
5132	French (Luxembourg)	1053	Swedish
6156	French (Monaco)	2077	Swedish (Finland)
1079	Georgian	1054	Thai
1031	German (Standard)	1055	Turkish
2055	German (Switzerland)	1058	Ukrainian
3079	German (Austria)	1056	Urdu (Pakistan)
4103	German (Luxembourg)	2080	Urdu (India)
5127	German (Liechtenstein)	1091	Uzbek (Latin)
1032	Greek	2115	Uzbek (Cyrillic)
1037	Hebrew	1066	Vietnamese

Language coding table

8.5   Remote Control

To avoid having to use 2 different modems for the remote surveillance and maintenance of a supervision station, **Alert** gives the possibility to share a communication port with remote control software (pcAnyWhere32 versions 7.5 and subsequent, Carbon Copy).

The port shared with the remote control software must be declared in **Alert** (see § 7.1"*General options*"). This port will be automatically transferred to the remote control software, either at the software launching if the remote control software is already launched at that moment and have reserved the port, or on an explicit demand of a remote operator.

If the remote control software is not active, it is possible to automatically start a remote control session from a remote station.

The procedure to apply is the following:

1.   Call **Alert** from a telephonic handset. After having entered your ID, you will have to type 2 times on the key "9" of the telephonic keypad. If the command is accepted (authorized user), an acknowledgment message is emitted. If the command is denied, a message as "command denied" is emitted. Hang up! When the line is available, **Alert** releases the communication port that was used then launches the remote control software. This last have before to be setup to run as "Host PC" on a modem connection using the modem in question.

2.   Wait some seconds, then, from the remote control software of the remote PC, call **Alert** at the same dial number. The remote control session start normally.

3.   At the end of the session, close the remote control software on the remote. **Alert** automatically detects the end of session, closes the remote control software on the host PC, then retrieves the communication port.

If an alarm is detected during a remote control session that requires the usage of the communication port affected to the remote control, the remote operator is warned by a screen message. If the option "Priority to alarms" is validated (see § 7.1"*General options*"), the message displays the delay remaining before closure of the session. If after this delay, the session is not closed by the user himself, **Alert** automatically closes the session to retrieve the port and trig the required call.

During a remote control session, it is possible to close **Alert** (from the remote PC), then to launch it again before closing the remote control session (after uploading a new version for example). At the end of the session, **Alert** automatically closes the remote control software then it retrieves its communication port, as the same manner as it has not been closed.

8.6   Alert as service

Alert can be run as a Windows service. Although this option offers new functionalities, its setup must be done carefully.

Service installation
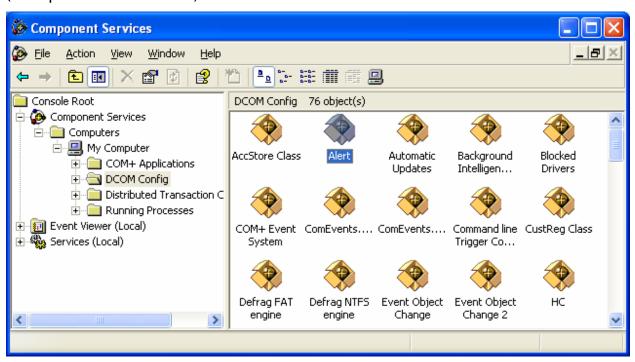
To activate this functionality, check the box "Application running as Windows service", in the Alert starting parameters. (See § 7.1.1 "*Starting parameters*")

Choose the executing user
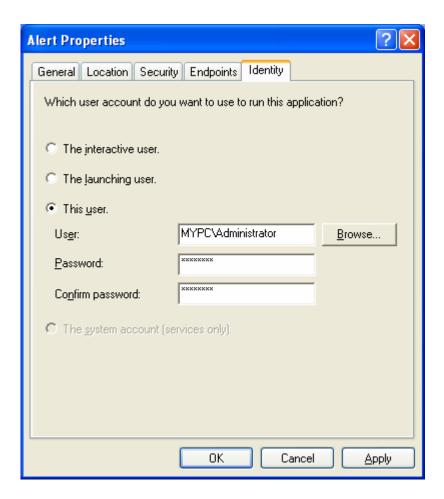
As Alert can be run without Windows login, you need to set the Alert executing user. To do this, use the Dcomcnfg tool. (Windows "Start" menu, command "Run", enter "Dcomcnfg" then validate).

In the displayed window, open the DCOM applications list.

(Example with Windows XP)

Click with the mouse right button on the "Alert" icon, the select the "Property" command in the contextual menu. On the displayed dialog box, select the "Identity" tab.

Enter the name and password of the Alert executing user (In the previous example, it is the Administrator).

CAUTION: The choice of the user restricts the OPC server use. As a matter of fact, in normal mode (not as service) the Alert OPC server can only be used by the Alert running user. In such a case you can always use the OPC client if the OPC server is deactivated. (See § 7.2 "*Supervision options*", button **OPC setup**: uncheck the box **OPC server activated**).
When running as service, the OPC server is fully operating!

Before starting service: Alert configuration

When Alert is started as service, its user graphic interface is not visible. You can only use the AlertClient interface to connect to Alert. As Alertclient does not offer a full configuration interface (you can setup on-call management and supervision, but neither the communication ports, nor the vocal server, nor general options …), you should do your Alert configuration before starting it as a service.

8.7   Command driver

This driver, built-in with the basic **Alert** software, allows writing commands to an external application or outputs to be initiated during a call cycle, to signal, for example, the call procedure failure or to request for a relief external call system.

The list of available commands can be configured either by accessing to the **Command** driver setup (see § 5.19 *"Communication drivers"*), or directly when invoking the **Command** driver in a user or group property sheet, by clicking on the button on the right of the corresponding **Number** or **Command** field.

The displayed dialog box shows the list of the defined commands (see § 5.16.1 *"Command list"*).

8.8   Beep driver

This driver is a generic driver which is used to call a beeper, receiver system that is only capable of alerting an operator by emitting a beep or a vibration, with optional display of a numeric message.

What is characteristic of this type of paging system is the possibility to use a simple telephonic keyboard to "beep" an operator and to transmit him a numeric message.
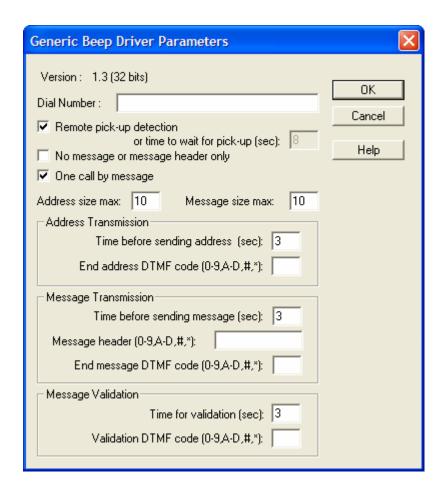
The interface with the beep manager system is a DTMF interface, with or without vocal server, that interprets DTMF codes sent by the telephonic keyboard to identify the recipient operator (operator address) and to get the numeric message to transmit.

The Beep driver simulates this behavior by using a modem to call the Beep service (if necessary) and to transmit him the call beep request (operator address, numeric message) using DTMF dialing.

The modem to use can be a simple dialer modem capable of transmitting DTMF codes without connection (treatment of the character ";" at number end to come back in command mode after dialing).

However, if the beep system requires the call of a vocal server, and therefore the remote pick-up detection, it is preferable to use a voice modem. Otherwise, if remote pick-up can't be recognized, one will suppose that the vocal server answers in a given time (temporization).

To configure a driver based on the generic Beep driver, select the driver in question in the "**Communication**" dialog box ("**Drivers**" tab), then click on the "**Properties…**" button.

The displayed dialog box allows the working parameters of the selected driver to be configured:

- The **dial number** is only used when the beep system requires the call of a particular service (dial number of the vocal server or prefix of the built-in beep service of the PABX). If there is not a specific number for the beep service, this field must be empty, all the necessary information being in the call number of the concerned operator.

- When the **Remote pick up detection** option is validated, the remote pick-up is waited after dialing to continue the beep call procedure. This option has to be validated only when the remote pick-up really exists and if the used modem is able to detect this remote pick-up (voice modem).
  When this option is not validated and however the remote pickup has to be waited, the time to wait for pick-up which is indicated (in seconds) is waited before continuing the beep call procedure.

- The **No message or message header only** option message must be validated only to call simple beepers (beepers incapable to receive a numeric message) or to transmit always the same message (entered in the "Message header" field) independent of the call reason (alarm or service message).

- The **One call by message** option proposes choice between triggering a beep call for each message to transmit (option checked) or triggering only a beep call for all the messages to transmit, the transmitted code being the code of the alarm which have the higher priority (option not checked).

- The **temporizing before sending address** parameter allows waiting the called service being ready to receive the recipient's address (end of transmission of the welcome message for example).

- The **end address DTMF code** is to configure only for servers that ask for a delimiter code at the end of address sequence.

- The **temporizing before sending message** parameter allows waiting, after the transmission of the address, the called service being ready to receive the message to transmit.

- The **message header** field allows the transmission of a constant string at the head of all messages (identification of the station for example). This string must only contain characters 0 to 9, A to D, # or *.

- The **end message DTMF code** is to configure only for servers that ask for a delimiter code at the end of message sequence.

- The **temporizing for validation** parameter allows waiting, after the transmission of the message the called service being ready to receive the validation code for message acceptance (if necessary).

- The **validation DTMF code** is to configure only for servers that ask for confirmation to send the message.

Using the Beep driver to call a telephone number with automatic call forward

The Beep driver can be used to call a telephonic number with automatic call forward after pick-up to a given number (call an operator to establish a voice communication with the central station for example).
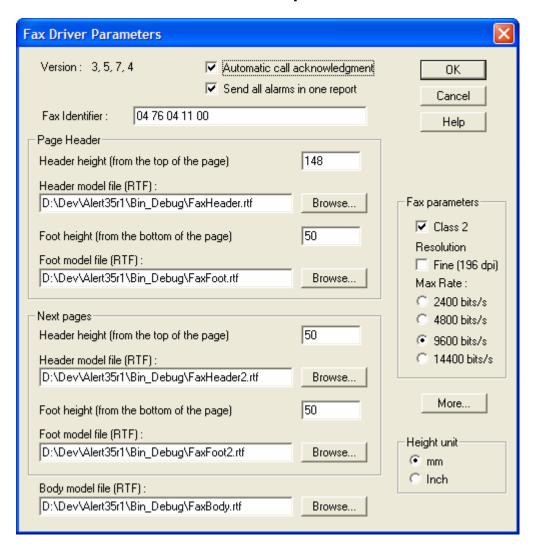
The recommended configuration of the Beep driver is the following:

- Remote pick-up detection validated
- End address DTMF code: "!"
- Time before sending message: 2 seconds
- Message header: number to call back (central station …)

8.9   Fax driver

This driver is used to drive the modem during a fax transmission and to format the transmitted message.

To configure the parameters of this driver, select the line "Fax" in the **Communication** dialog box (on **Drivers** tab), then click on the **Properties...** button.

The displayed dialog box allows the configuration of the following parameters:

*   The **Automatic call acknowledgment** option, when checked, avoids having to call back **Alert** to confirm the fax reception.

*   The **Send all alarms in one report** option allows, when checked, the transmission of all the alarms on the same fax. When this option is not checked, a fax is transmitted for each alarm.

*   The **fax identifier** (maximum 20 characters).

    This identifier is used by the protocol to identify the calling fax on the display of the receiving fax and for the statistical reports of this last. For compatibility with some fax, it is better to only use numeric characters (generally the phone number of the calling fax).

*   The **header** to write on the top of each page (for the first page and the following pages).

The fax header is formatted following the specified model file and size. The model file is created in RTF format and contains references to variables that will be dynamically replaced during the fax transmission. These references are:

&TO&	*Report receiver*
&SUBJECT&	*Report subject*
&STATION&	*Emitting station name*
&DATE&	*Current date at the fax transmission*
&TIME&	*Current time in format "HH:MM:SS"*
&PAGES&	*Number of page in the report*

These references can be used several times. The font and position of the values will be those of their references.

- The **page foot** to write on the first page and/or the other pages.

  As for the header, the foot page is build following a model RTF file and a size of page foot. If the size of the formatted file exceeds the size of the foot (idem for the header), the display is truncated.

  The header and the page foot of the first page can be different of the headers and foot pages of the other pages.

- The **body** of the fax.

  The body is also build from a model RTF file, but it is never truncated (the report stretches over several pages if necessary). The references used for the header and foot page are always valid. For the body, it is possible to define a structure with reference on the alarms. This structure is repeated for each alarm.

  The added references are the following:

&BODY&	*Begin of the structure to repeat for each alarm*
&ALDATE&	*Date of the alarm*
&ALTIME&	*Time of the alarm in format "HH:MM:SS"*
&ALMESS&	*Alarm message*
&ALINSTRUC&	*Instruction file that will be inserted in the fax*
&ENDBODY&	*End of the structure to repeat for each alarm*

  All the references between &BODY& and &ENDBODY& will be replaced for each alarm by the corresponding values.

- The **fax transmission parameters**:

  ➢ The **Class 2** option forces the fax modem in class 2, without prior test in class 1.

  ➢ The **vertical resolution** to use. The "high resolution" choice corresponds to a vertical resolution of 196 points per inch. if this option is not selected, the normal resolution is used (98 points per inch).

  ➢ The selection of the **bit rate** used by the modem. This bit rate depends on the modulation supported by the fax modem used:

2400 bits/s	V27 ter
4800 bits/s	V27 ter
9600 bits/s	V29 or V17
14400 bits/s	V33 or V17

The **More…** button gives access to the configuration of communication parameters (baud rate, format, parity…) that will be used to call a fax. For more information, consult the online help of the corresponding dialog box.

8.10 Email driver

This driver can be used either to send common emails or to transmit messages to pagers or mobile phones (smart messages) via an email server.
It can also be used to create Alert reports. The email report sender must be one of the Alert operators with his email address as his active call number.

In the case of a common email, the receiver address is specified in the "number" field associated with the "Email" driver in the form of the concerned user. The message body that will be transmitted will contain the alarm or service message followed by the contents of the text file eventually attached.
Depending on the message type (alarm or service), the associated subject and sender will be:

- **Alarm message**: the sender contains the title of the Alert windows (ALERT by default); the subject can be formatted with fields which are dynamically replaced by their value.

- **Service message**: the sender is the name of the logged operator; the subject contains a configurable text.

In the case of an email destined to a pager or mobile phone, the receiver address specified in the **number** field associated with the "Email" driver in the form of the concerned user must contain as header one of the following strings:

- "\\" if the information that designates the end-receiver is contained in the email address,

- "<mobile number>" if the end-receiver has to be designated in the email subject, with <mobile number> designating the mobile address (or pager address) such as it has to be specified in the email subject.
  In this case, only the alarm or service message is transmitted (no text file).

In the **number** field associated with the "Email" driver in the form of the concerned user, it is possible to precise email CC recipients. The format is the following: main_recipient(copy_recipient1,copy_recipient2,…)
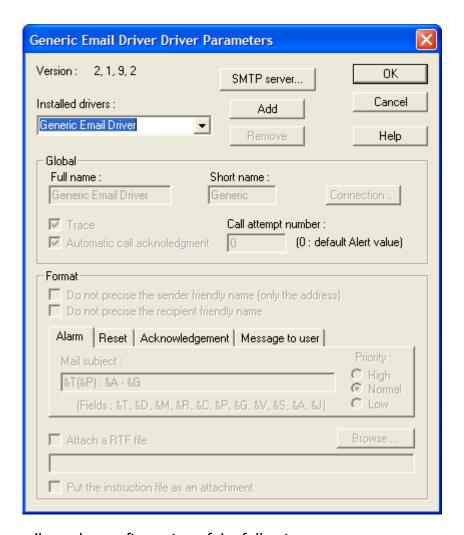
The email driver can be configured with several Providers. Each connection that can be used on the system can be managed by a sub-driver of the email driver.

To configure the parameters of the "Email" driver, select in the **Communication** dialog box (on "Drivers" tab) the line **Generic Email** or directly choose the sub-driver of the wished connection, then click on the **Properties…** button.

In the case of the generic driver "Generic email", it is possible to add a new sub-driver or to delete a defined sub-driver. To create a new driver, click on the **Add** button. To delete a sub-driver, select it in the **installed drivers** list then click on the **Remove** button.
After having created a new sub-driver, define its properties then validate by clicking on the **OK** button.

In the case of sub-drivers, it is only possible to modify the parameters of the selected driver.

The dialog box allows the configuration of the following parameters:

- The **Full Name** field gives the name of the sub-driver that will appear in the driver list.

- The **Short Name** field gives the name of the driver in the configuration file (after creation, it can't be modified).

- The **Trace** option allows the recording in the event log of the messages sent to the email server.

- The **Automatic call acknowledgment** option, when checked, avoids having to call back **Alert** to confirm the email reception. If this option is not checked, the mail is sent with a request for a receipt notification. The call is acknowledged when the receipt is received by Alert or if the user call back Alert.

- The value of the **Call attempt number** field indicates the number of call attempts for the driver in case of failure. If the value is 0, le number of attempt will be the one defined in Alert call options.

The check boxes concerning the message **Format** define allow the indication or not of the friendly name of the sender and recipient in their address.

The tabs allow the selection of the type of message (Alarm, Reset Acknowledgment or User message) to modify the parameters that are specific to each type of message:

- The **Mail subject** field contains the subject of the email to use when sending the message (according to the selected tab). The subject can contain fields that will be dynamically replaced at sending time. This fields are the following:

  | **&T** | *message type (alarm, reset or acknowledgement)* |
  | **&D** | *alarm date and time* |

&M	*alarm message*
&R	*alarm name*
&C	*numeric code*
&P	*alarm priority*
&G	*alarm group*
&V	*alarm value*
&S	*station where the alarm occurred*
&A	*alarm call group*
&J	*list of attached files*

- The **Priority** selection defines the priority of the message (according to the selected tab).

- The option **Attach a RTF file** allows a formatted file for alarm description to be attached to the mail. The attached file is formatted following a model file defined in the edit field. To choose the file, click on the **Browse** button.

  The model file is created in RTF format and contains references to variables that will be dynamically replaced during the mail transmission. These references are:

&TO&	*Report receiver*
&SUBJECT&	*Report subject*
&STATION&	*Emitting station name*
&DATE&	*Current date at the fax transmission*
&TIME&	*Current time in format "HH:MM:SS"*
&PAGES&	*Number of page in the report*

  These references can be used several times. The font and position of the values will be those of their references.

  Other references can be used in the file body:

&BODY&	*Begin of the structure to repeat for each alarm*
&ALDATE&	*Date of the alarm*
&ALTIME&	*Time of the alarm in format "HH:MM:SS"*
&ALMESS&	*Alarm message*
&ALINSTRUC&	*Instruction file that will be inserted in the fax*
&ENDBODY&	*End of the structure to repeat for each alarm*

  Inside the body, the references can be repeated as often as wished.
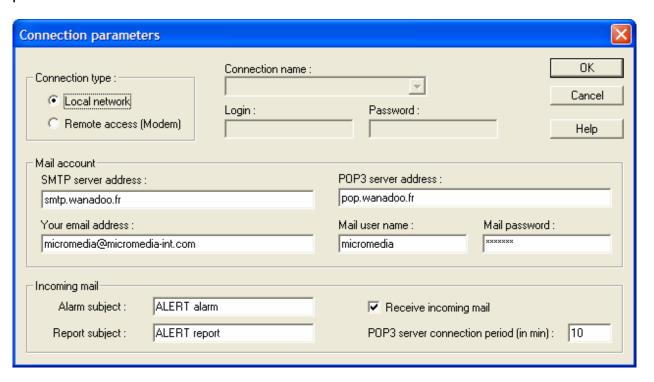
- The option **Put the instruction file as an attachment** gives the possibility of attachment of the instruction file to the message rather than inserting its content in the message body.

The **SMPTP server...** button gives access to the parameter box of the SMPTP server of Alert to directly receive the messages without having to use a mail account.

- The **Enable SMTP server** Option allows the activation of the SMTP server for the reception of email by Alert.

- The **Report subject** field defines the subject of the mail that will be processed as reports.

- All the mails received with the subject defined in the **Alarm object** field will set, reset or acknowledge alarms in Alert. (see below for the syntax to use)

The **Connection** button gives access to the dialog box of configuration of the connection parameters.

That dialog box allows the connection parameters to the mail servers to be modified.

- The **LAN** / **Modem** radio buttons specify the access mode to the mail server: local network (LAN) or Dial-Up networking (modem).

- The **Connection name** dropdown list selects, in case of a modem connection, the "Dial-Up networking connection" to use to reach the mail server.

  In that case, the user account and password that have been assigned by the Internet provider have to be defined in the fields **Login** and **Password**.

- The **SMTP server address** field provides the network address of the mail server (machine name such as "mail.compuserve.com", or a dotted number such as "128.56.22.8").

- The field **Your email address** must contain the e-mail address of the sender (used for receipt acknowledgment and reports).

- The **POP3 server address** field provides the network address of the pop3 server used to get the received mails. To be able to receive mails sent to the address **Your email address**, for reports or receipt notifications, the option **Receive incoming mail** must be checked, the **Mail user name** and **Mail password** must be entered and the polling period of the pop3 server must be defined (in minutes).

The **Report subject** field is a filter for selecting the emails which will create Alert reports (these mails can contain attached files).

All the e-mails received with the subject given in **Alarm subject** will set, reset or acknowledge an alarm in Alert. The mail body should describe the alarm.

To do this, the sender can use the following syntax:

Type1:Value1; Type2:Value2; …

The defined types are:

IDENT	*alarm identifier*
STATE	*alarm state (0: reset, 1: set, 2: acknowledgement)*
PRIORITY	*alarm priority (0 to 999)*
ALPHAMESSAGE	*alphanumeric alarm message*
ALPHAMESSAGERST	*alphanumeric message for alarm reset*
ALPHAMESSAGEACK	*alphanumeric message for alarm acknowledgment*
NUMMESSAGE	*numeric alarm message*
NUMMESSAGERST	*numeric message for alarm reset*
NUMMESSAGEACK	*numeric message for alarm acknowledgment*
CALLGROUP	*alarm call-group (created if not exist)*
CALLGROUPRST	*reset call-group (created if not exist)*
CALLGROUPACK	*acknowledgment call-group (created if not exist)*
ALARMGROUP	*alarm alarm-group (created if not exist)*
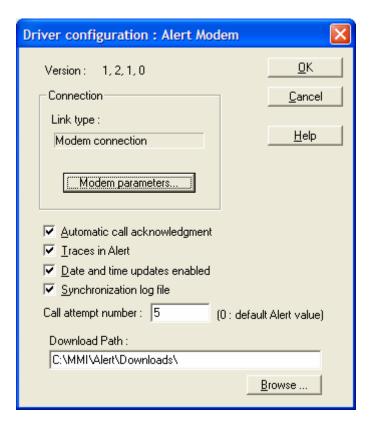
Only the IDENT field is mandatory. The driver can manage only one alarm per mail.

8.11 Alert driver

This driver is used for the centralized management of alarms. It allows the synchronization of remote Alert stations with one or several central Alert stations.

The Connection group defines the parameters of the connection taken in charge by the driver.

- The **Link type** field defines the type of the link. The content of this field cannot be edited and depends on the selected driver:
  - ➢ **Alert Direct**   direct connection
  - ➢ **Alert Modem**   modem connection
  - ➢ **Alert Socket**   TCP/IP connection.
- The extra parameters depend on the type of connection.
  - ➢ In the case of a direct link, there are no extra parameters.
  - ➢ For a modem connection, a button gives access to the modem parameters.
  - ➢ For a TCP/IP connection, a field defines the IP port that will be used by the driver.

When the **Automatic call acknowledgment** option is checked, it is not necessary to call back **Alert** to confirm the reception.

The **Trace in Alert** option activates the trace of the driver work in the event log.

When the option **Date and time updates enabled** is checked, a synchronization call can modify the system date and time.

The station synchronization call can be described in a file called "StationName.log" if the **Synchronization log file** option is selected.

The value given in **Call attempt number** is the call attempt number, in case of call failure, specific to this driver. If null, the number of attempt is the default one defined in Alert options.

The **Download path** field defines the path of the directory in which the files downloaded by Alert will be copied. If the user specifies a path in the file transfer dialog box, this path will be added to the path defined here.

8.12 DDE server interface

8.12.1 General presentation

The DDE server interface gives a standard access to the internal database of Alert (using the service name "**ALERT**") to control alarm and call processing.

This interface includes the following DDE topics:

- The **SYSTEM** topic contains general information about the DDE protocol and control items of the application,,
- The **USER** topic contains information about operators,
- The **GROUP** topic contains information about the on call management,
- The **ALARM** topic contains information about alarms.

To reach the server DDE of **Alert** through a network, from a remote computer, it will be necessary to use the DDE share names that are recorded automatically by the server application:

- ➢ **ALERT_SYSTEM$**   for "SYSTEM" topic
- ➢ **ALERT_USER$**   for "USER" topic
- ➢ **ALERT_GROUP$**   for "GROUP" topic
- ➢ **ALERT_ALARM$**   for "ALARM" topic

The items belonging to each of these topics can be read by a simple request (REQUEST transaction) or by a request for advise (ADVISE transaction). Some topics can also be written (POKE transaction).

The most usual format is the TEXT format. When an item contains a list of values, the values are separated by tabulations. **Alert** can also process transactions using specific block formats ("XLTABLE", "INTOUCH BLOCKED DDE V2" …)

The DDE interface of the ALERT server also accepts EXECUTE transaction on the SYSTEM topic. See § 8.13 *"Command interface (DDE or Command line)"* for the syntax of these commands.

Note: the list of topics and items processed by the DDE interface of **Alert** is presented in the dialog box displayed by selecting the **DDE server** command of the "**?**" menu.

8.12.2   SYSTEM topic

The SYSTEM topic contains general items concerning the DDE protocol and items to control the **Alert** application.

8.12.2.1   DDE protocol items

➢ **TOPICS**   List of topics supported by the DDE server

➢ **SYSITEMS**   List of items supported under the SYSTEM topic

➢ **STATUS**   Current status of the application:
INIT   processing initialization
READY   in normal operational mode
DEMO   in demonstration mode

➢ **FORMAT**   List of supported formats

➢ **CONVCOUNT**   Current number of DDE conversations established with the SYSTEM topic

➢ **ADVISECOUNT**   Current number of advise transactions with items of the SYSTEM topic

8.12.2.2   Application control items

➢ **SHOW**   Command to display the **Alert** window:
"0"   Hide the Alert window
"1"   Display of the Alert window with normal size
"2"   Display of the Alert window as icon
"3"   Display of the Alert window as maximized (full screen)
"4"   Alert window always visible (topmost window)

➢ **CLOSE**   Command to close the **Alert** application:
"1"   Close if no other DDE conversation is established
"2"   Unconditional closure

➢ **ALERTLOCK**   Working status of the station (calls transmitted or not):
"0"   The station is active ("Alert" led is green), calls are normally transmitted
"1"   The station is inactive ("Alert" led is red), only calls concerning no redundant events are processed.

This status can be controlled by a client application to force the working status of the station (redundancy controlled by a supervisor for example).

➢ **VALPORT**   Number of valid communication ports (configured and available to transmit calls)

➢ **LINKSTATUS**   Status of the link with supervised application
"0"   Link not established
"1"   Connection in progress
"2"   Link established
"3"   Link failure

- **REDUNDANCYSTATUS**

  Status of redundancy
  "0"   Redundancy not initialized
  "1"   Redundancy test in progress
  "2"   Redundancy OK
  "3"   Redundancy failure

- **COMi / MODEMi / CAPIPORTi / SOCKETi**

  Status of the communication port i
  "0"   Port closed
  "1"   Port in failure
  "2"   Initialization in progress
  "3"   Modem ready or communication established (direct link)
  "4"   Call in progress (incoming or outgoing call)
  "5"   Connected in data mode (Terminal)
  "6"   Connected in fax or voice mode
  "7"   Disconnection in progress

- **WATCHDOGCOUNTER**

  Actual value of the "watch dog" counter. This value is incremented every second and varies between 0 and the maximum value which is defined in the watch dog parameters (see § 7.2 "Supervision options")

➢ **COMMAND** Command for execution of procedures by "poke"
(See § 8.13 *Command interface (DDE or Command line)*

➢ **REPORT** Report for command interpretation
(See § 8.13 *Command interface (DDE or Command line)*

➢ **TRACE** Trace of events (logins, calls, acknowledgments, ...), under the form:

  "Event code" <Tab> "Parameters"

  (*See table at § 7.2 "Supervision options"* for the event coding)

8.12.3   USER topic

The USER topic contains, in addition to the DDE protocol items, some items concerning operators.

8.12.3.1   DDE protocol items

➤ **TOPICITEMLIST**   List of items supported under the USER topic

➤ **CONVCOUNT**   Current number of DDE conversations established with the USER topic

➤ **ADVISECOUNT**   Current number of advise transactions with items of the USER topic

8.12.3.2   User management items

➤ **DRIVERLIST**   List of installed communication drivers

➤ **USERCOUNT**   Number of defined operators

➤ **USERLIST**   List of operators, each operator in the list being represented by his name followed by his first name

➤ **USERACCES**   Operator login request through DDE by poke of the string:

> *"user name" <Tab> "access code"*

If the name (followed or not by first name) and the associated code are valid, the poke command is accepted.

If a call was pending for the operator in question, it is automatically acknowledged.

The USER topic also includes for each operator:

➤ a **<USER>** item that contains the **record of the user** designated by <USER>, operator's name followed or not by his first name (or an abbreviation of the first name). See the record description below.

• a **<USER>.ONDUTY** item allowing the on-duty status of the user to be read and write:
>   0 =   user off-duty
>   1 =   user on-duty

➤ a **<USER>.CALLSTATUS** item for reading of the call cycle status of the user:
>   0 =   on call cycle for the user
>   1 =   call in progress
>   2 =   call suspended
>   3 =   call succeeded (wait for call acknowledgment)
>   4 =   call failed
>   5 =   call acknowledged
>   6 =   call not acknowledged (failed)

➤ a **<USER>.SCHEDULE.N** item that contains the on call schedule of the operator designated by <USER> for the N'th week starting from the current week (N = 0 to 51). By default N is set to 0 (schedule for the current week).

➢ a **<USER>.MESSAGE.N** item that contains the N'th message (by default N=0) in the mailbox of operator designated by <USER>.

➢ a **<USER>.REPORT** item that contains the report transmitted by operator designated by <USER>.

The **user record** item contains a line of 17 fields separated by tabulation characters (TAB) and ended by a carriage return (CR):

Field 1	User ID code (numerical identification number)
Field 2	User name
Field 3	User first name
Field 4	Access level (0, 1 or 2)
Field 5	1st call number
Field 6	Driver code for 1st call number
Field 7	Validation of 1st call number (0/1)
Field 8	2nd call number
Field 9	Driver code for 2nd call number
Field 10	Validation of 2nd call number (0/1)
Field 11	3rd call number
Field 12	Driver code for 3rd call number
Field 13	Validation of 3rd call number (0/1)
Field 14	Index of active number (0 = none, 1, 2 or 3)
Field 15	Index of relief number (0 = none, 1, 2 or 3)
Field 16	0 = operator off-duty, 1 = operator on-duty
Field 17	Name of substitute operator (when field 16 = 0)

In writing (poke), the whole file is transmitted, but only fields 5 to 17 are taken into account.

The **schedule** item is represented for reading by a line of 7 identical fields separated by tabulations and ended by a carriage return (CR). Each field contains the on call schedule for one day of the week, the 1st field representing the schedule for Monday.

Each field of the schedule has the following format: "**DD-MM:XXXXXX**", with:

JJ   =   day of month (01 to 31)

MM   =   month (01 to 12)

XXXXXX   =   6 hexadecimal digits representing the daily schedule in the form of a bit field, a bit being set if the operator is on call, the 1st bit (MSB) corresponding to 0h.

Example: 03FFF8 corresponds to the daily schedule:

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-

This item cannot be written (poke denied).

The **message** item is shown for reading by a line of 4 fields separated by tabulations and ended by a carriage return (CR):

Field 1	Index of the message (starting from 1)
Field 2	Date/time of deposit of message (format "DD-MM HH:MM:SS")
Field 3	Name / first name of user who sent the message
Field 4	Message content

In writing, only the value "0" is allowed, which provokes the deletion of all the messages sent to the operator.

8.12.4 GROUP topic

The GROUP topic contains, in addition to the DDE protocol items, some items concerning on-call groups.

8.12.4.1 DDE protocol items

➢ **TOPICITEMLIST**   List of items supported under the GROUP topic

➢ **CONVCOUNT**   Current number of DDE conversations established with the GROUP topic

➢ **ADVISECOUNT**   Current number of advise transactions with items of the GROUP topic

8.12.4.2 Group management items

➢ **GROUPCOUNT**   Number of defined on-call groups

➢ **GROUPLIST**   List of on call groups

The **GROUP** topic also includes **for each group**:

➢ a **<GROUP>.STATUS** item that indicates the on-call status of the group designated by <GROUP>:

    0 = there is no on-call team defined at the current time,
    1 = the current on-call team is defined in reduced duty (only called for important alarms),
    2 = the current on-call team is defined in normal duty (called for all alarms),
    3 = no valid user in the current on-call team.

This item is read only.

➢ a **<GROUP>.TEAM** item that returns the name of the current team to call for the group designated by <GROUP>. This item is read only.

➢ a **<GROUP>.DEROGTEAM** item that designates the team selected to be called when the group designated by <GROUP> is in derogation state. This item is read only.

➢ a **<GROUP>.DEROGATION** item that specifies the current derogation status of the group designated by <GROUP>:

    0 = group in normal on-call state (teams called according to the defined schedule),

1 = group in derogation state. The called team is the one that is preset as derogation team. If there is not a preset team, calls concerning the group are locked.

This item is read only.

➢ a **<GROUP>.CALLSTATUS** item that indicates the current status of the call cycle for the group designated by <GROUP>:

0 = no current call cycle for the group,
1 = call cycle in progress,
2 = call transmitted (wait for call acknowledgment),
3 = group unwarned (call failed),
4 = warned group (calls acknowledged).

This item is read only.

➢ a **<GROUP>.CALLSTATUS** item that indicates the team changeover status of the group designated by <GROUP>:

0 = programmed schedule or forced team,
1 = team changeover done (before the scheduled time),
2 = waiting for team changeover (after the scheduled time or on-call ended in the "team changeover mandatory" mode),
3 = timeout for team changeover expired,
4 = on-call ended (before the scheduled time, except in the "team changeover mandatory" mode).

This item is read only.

8.12.5 ALARM topic

The ALARM topic contains, in addition to the DDE protocol items, some items concerning alarms.

8.12.5.1 DDE protocol items

➢ **TOPICITEMLIST**   List of items supported under the ALARM topic

➢ **CONVCOUNT**   Current number of DDE conversations established with the ALARM topic

➢ **ADVISECOUNT**   Current number of advise transactions with items of the ALARM topic

8.12.5.2 Alarm management items

➢ **PORTFAIL**   Communication port failure (modem)
                        0 = all ports ok
                        1 = at least one port is failed
                        2 = all ports are failed

➢ **REMOTEPORTFAIL**   Communication port failure (modem) on redundant station
                        0 = all ports ok
                        1 = at least one port is failed
                        2 = all ports are failed

- ➢ **DDEFAIL**   Not zero if the DDE conversation with the supervised application is broken or faulty

- ➢ **REMOTEDDETFAIL**   Application link failure (DDE or OPC) on redundant station

- ➢ **REDUNDANCYFAIL**   Redundancy failure
      0 = redundant station ok
      1 = link or port failure on redundant station
      2 = link failure with redundant station

- ➢ **ALARMLOCK**   0 if no on-call group is in derogation state,

      1 if at least one on-call group is in derogation state.

      In writing, the value 1 forces all groups in derogation state

- ➢ **GROUPCOUNT**   Number of defined functional groups

- ➢ **GROUPLIST**   List of functional groups

- ➢ **ALARMACK**   Command to acknowledge an alarm, under the form:
          "*AlarmRef* <Tab> *User*"

      AlarmRef is the identifier of the alarm to acknowledge.

      User is the name of the operator who acknowledge the alarm. The part "<Tab> *User*" can be omitted, in which case the alarm is acknowledgement anonymously.

- ➢ **ALARMCOUNT**   Number of alarms in the alarm table

- ➢ **ALARMLIST**   Alarm table (read only)

This table is represented bar a list of lines having the format defined below for the items ALARM.N.

The **ALARM** topic also contains **an item for each alarm of the alarm table**. This item is identified by the name **ALARM.N**, the value N representing the index of the alarm in the table starting from 0, the maximum value being equal to the value of ALARMCOUNT item minus one.

For read operations, an alarm item is represented by a line of 10 fields separated by tabulations and ended by carriage return (CR):

Field 1	"-" if inactive alarm, "*" if active alarm
Field 2	Date/Time of alarm (format "DD/MM HH:MM:SS")
Field 3	Alarm identifier
Field 4	Alarm message
Field 5	Date/Time of acknowledgment ("DD/MM HH:MM") "-" if not acknowledged alarm
Field 6	Name of acknowledging operator, "-" if not acknowledged alarm.
Field 7	Alarm priority
Field 8	Value of the variable associated with the alarm
Field 9	Name of file containing the instructions Empty field if no instructions
Field 10	Name of functional group of the alarm

In writing, this item allows the acknowledgment of an alarm, by specifying in the data field the name of the operator who acknowledges the alarm.

8.13   Command interface (DDE or Command line)

8.13.1   Presentation

Some functions can be commanded by writing a command string in the **COMMAND item** of the SYSTEM topic or transmitting the same string through an **EXECUTE** transaction or through the "ALERT" **command line**. The DDE commands can be sent from a remote station connected by network (NETDDE).

The available commands are::

ALERT_SZCREATEALARM	"CreateAlarm"	Creation of an alarm
ALERT_SZSETINSTRUCTIONS	"SetInstructions"	Attach an instruction file
ALERT_SZSETPRIORITY	"SetPriority"	Modify the alarm priority
ALERT_SZSETALARM	"SetAlarm"	Activate / deactivate an alarm
ALERT_SZACKALARM	"AckAlarm"	Alarm acknowledgment
ALERT_SZMASKALARM	"MaskAlarm"	Mask / unmask alarm
ALERT_SZACKCALL	"AckCall"	Call acknowledgment
ALERT_SZCALLGROUP	"CallGroup"	Group call
ALERT_SZCALLUSER	"CallUser"	Call for service message
ALERT_SZVALIDUSER	"ValidUser"	Validate / invalidate an operator
ALERT_SZSENDCONSOLE	"SendConsole"	Send a message to the remote console
ALERT_SZACKCONSOLE	"AckConsole"	Acknowledge a console message
ALERT_SZRESTORELINKS	"RestoreLinks"	Reinitialize the DDE and OPC connections
ALERT_SHOWWINDOW	"ShowWindow"	Selects the display of ALERT window
ALERT_PLAYTEXT	"PlayText"	Synthesizes and plays a message on the local station

8.13.1.1   DDE command

If the command is denied, the POKE or EXECUTE command returns an error. The error cause can be read in the **REPORT** item of the SYSTEM topic.

The **REPORT** item can be read by a simple request (REQUEST) or by a demand for advise (ADVISE). It returns the report value of the last executed command:

ALERT_ERR_NOERROR	00	Command accepted
ALERT_ERR_INVALIDCOMMAND	02	Invalid function
ALERT_ERR_SYNTAXERROR	03	Syntax error
ALERT_ERR_LOWMEMORY	04	Memory overflow
ALERT_ERR_INVALIDGROUP	05	Invalid group name
ALERT_ERR_INVALIDALARM	06	Invalid alarm identifier
ALERT_ERR_ACKNOWLEDGED	07	Alarm already acknowledged.
ALERT_ERR_INVALIDUSER	08	Invalid user name
ALERT_ERR_NOCONSOLE	09	No console defined

The report for execution of a command that needs a delay to be completed (call command) should be interpreted by analysis of the events sent back in the **TRACE** item of the SYSTEM topic (see § 8.12.2).

The commands are transmitted under the form of character strings (upper or lower case) including a command label, followed by a parameter list, each parameter being separated from the previous by a tab character.

8.13.1.2   Command by command line

The commands are transmitted under the form of character strings (upper or lower case) including the name of the ALERT application (with full path), a command label followed by a parameter list, each parameter being separated from the previous by a tab or a space character. If a parameter includes spaces or tabulations, it must be transformed in a quoted string (").

8.13.2   CreateAlarm

Object: Creation of an entry in the event list

Parameters:

1st parameter	alarm identifier
2nd parameter	attached on call group
3rd parameter	associated alphanumeric alarm message
4th parameter	associated numerical alarm message (optional)
5th parameter	name of audio file containing the associated vocal message (optional)

Example:

DDE command:

```
CreateAlarm <Tab> Pressure <Tab> Technical <Tab> Boiler overpressure
<Tab> 00835 <Tab> C:\Message\Pressure.wav
```

Command line:

```
ALERT  CreateAlarm  Pressure   Technical   "Boiler overpressure"    00835
"C:\Message\Pressure.wav"
```

8.13.3   SetInstructions

Object: Attach an instruction file to an alarm

Parameters:

1st parameter	alarm identifier
2nd parameter	Nom of text file containing the instructions
3rd parameter	1 = demand to delete the file upon deletion of alarm
	(by default: 0 = file never deleted)

Example:

DDE command:

```
SetInstructions <Tab> Pressure<Tab> c:\inst\pressure.txt
```

Command line:

```
ALERT  SetInstructions  Pressure  "c:\inst\pressure.txt"
```

(Attach the file "c:\inst\pressure.txt" to the alarm "Pressure")

8.13.4   SetPriority

Object: Modify the priority of an alarm

Parameters:

1st parameter	alarm identifier
2nd parameter	Priority level (0 to 99)

Example:

<u>DDE command:</u>

```
SetPriority <Tab> Pressure<Tab> 3
```

<u>Command line:</u>

```
ALERT SetPriority  Pressure  3
```

(set the priority level of alarm "Pressure" to 3)

8.13.5   SetAlarm

Object: Activate/deactivate an alarm

Parameters:

1st parameter	alarm identifier
2nd parameter	"1" to activate, "0" to deactivate (optional, 1 by default)
3rd parameter	alarm value (optional)

Example:

<u>DDE command:</u>

```
SetAlarm <Tab> Pressure<Tab> 1
```

<u>Command line:</u>

```
ALERT SetAlarm Pressure 1
```

(activate "Pressure" alarm, and start a call to the "Technical" group, following the configuration set by CreateAlarm)

8.13.6 AckAlarm

Object: Acknowledgment of an alarm (suspend pending calls for this alarm)

Parameters:

1st parameter	alarm identifier
2nd parameter	name of user who acknowledges the alarm (optional)

Example:

DDE command:

```
AckAlarm <Tab> Pressure
```

Command line:

```
ALERT  AckAlarm  Pressure
```

8.13.7 MaskAlarm

Object: Masks or unmasks an alarm

Parameters:

1st parameter	alarm identifier
2nd parameter	"1" to mask, "0" to unmask (optional, 1 by default)
3rd parameter	name of user who masks the alarm (optional)

Example:

DDE command:

```
MaskAlarm <Tab> Pressure
```

Command line:

```
ALERT  MaskAlarm  Pressure
```

8.13.8 AckCall

Object: Acknowledgment of a call

Parameters:

1st parameter	name of called user
2nd parameter	name of user who acknowledges the call (optional)
3rd parameter	"1" to require disconnection , "0" else (optional, 0 by default)

Example:

DDE command:

```
AckCall <Tab> Bob
```

Command line:

```
ALERT  AckCall  Bob
```

8.13.9   CallGroup

Object: Creation of a temporary alarm, alarm activation and calling the associated group. This alarm will be deleted after acknowledgment.

Parameters:

1st parameter	destination of on-call group
2nd parameter	alarm identifier
3rd parameter	associated alphanumeric alarm message
4th parameter	associated numerical alarm message(optional)
5th parameter	name of audio file containing the associated vocal message (optional)

Example:

DDE command:

```
CallGroup <Tab> Technical <Tab> Pressure <Tab> Boiler overheating <Tab>
00835 <Tab> C:\Message\Pressure.wav
```

Command line:

```
ALERT  CallGroup   Technical    Pressure   "Boiler overheating"   00835
"C:\Message\Pressure.wav"
```

8.13.10   CallUser

Object: Call a user for transmission of a message

Parameters:

1st parameter	name of user
2nd parameter	alphanumerical message to transmit
3rd parameter	numerical message to transmit(optional)
4th parameter	name of SOUND file containing the associated vocal message (optional)
5th parameter	name of associated TEXT file (optional)

Example:

DDE command:

```
CallUser <Tab> Bob <Tab> Call Alert station
```

Command line:

```
ALERT  CallUser Bob "Call Alert station"
```

8.13.11   ValidUser

Object: Set an user on-duty or off-duty

Parameters:

1st parameter	name of user
2nd parameter	"0" = off-duty, "1" = on-duty (optional, 1 by default)

Example:

DDE command:

```
ValidUser <Tab> Bob <Tab> 0
```

Command line:

```
ALERT  ValidUser  Bob  0
```

8.13.12   SendConsole

Object: Send a message to the operators defined with the console attribute (see § 5.1 *"User"*).

Parameters:

1st parameter	alphanumerical message to transmit
2nd parameter	message identifier (optional)

The message identifier is used to identify the message upon acknowledgment (AckConsole). If this identifier is defined, the message will only be transmitted during the on call period of the remote console, this message being hold until that period. If the identifier is not defined (no 2nd parameter), the message is systematically transmitted, whether or not the remote console is on call.

Example:

DDE command:

```
SendConsole <Tab> Battery fault (message forced)
SendConsole <Tab> Battery fault <Tab> A001 (message transmit if on call)
```

Command line:

```
ALERT  SendConsole  "Battery fault"   (message forced)
ALERT  SendConsole  "Battery fault"  A001  (message transmit if on call)
```

8.13.13 AckConsole

Object: Acknowledgment of a console message

Parameters:

    1st parameter   identifier of message to acknowledge

Example:

<u>DDE command:</u>

```
AckConsole <Tab> A001
```

<u>Command line:</u>

```
ALERT AckConsole  A001
```

8.13.14 RestoreLinks

Object: Reinitialize the DDE and OPC links

Parameters:

    none

Example:

<u>DDE command:</u>

```
RestoreLinks
```

<u>Command line:</u>

```
ALERT  RestoreLinks
```

8.13.15 ShowWindow

Object: Acknowledgment of a console message

Parameters:

    1st parameter   display mode

                        "0"   Hide the Alert window

                        "1"   Display of the Alert window with normal size

                        "2"   Display of the Alert window as icon

                        "3"   Display of the Alert window as maximized (full screen)

                        "4"   Alert window always visible (topmost window)

Example:

<u>DDE command:</u>

```
ShowWindow <Tab> 2
```

<u>Command line:</u>

```
ALERT ShowWindow  2     (set the ALERT window as icon)
```

8.13.16 PlayText

Object: Synthesizes and plays a message on the local station (require TTS option)

Parameters:
1st parameter   message to synthesize

Example:

<u>DDE command:</u>

```
PlayText <Tab> Full alert
```

<u>Command line:</u>

```
ALERT PlayText  "Full alert"
```

8.13.17 SendDataToScript

Object: Transmits a string command to the Message Processor

Parameters:
1st parameter   message to process

Example:

<u>DDE command:</u>

```
SendDataToScript <Tab> AAAA XXX ZZZZ
```

<u>Command line:</u>

```
ALERT SendDataToScript "AAAA XXX ZZZZ"
```

8.14   Message Processor

8.14.1   General presentation

The message processor is a specific mediator module of **Alert**. Its function is to deal with messages for alarm information extraction and triggering of consequent treatments (alarm set/reset, acknowledgment).

Messages are any character strings, alphanumerical or binary, that can be issued from different sources:

1) Serial link

Messages are issued from an external system through a serial link (printer output of an external system for example). Messages can be either asynchronously received or required by the message processor (polling sequence). Acknowledgment can be transmitted.

2) TCP/IP

Messages are issued from an external system through a TCP/IP network, in connected mode (TCP) or as datagram (UDP). Messages can be either asynchronously received or required by the message processor (polling sequence). Acknowledgment can be transmitted.

3) Alarm

Messages are transmitted in the content of a string variable declared as event in Alert (DDE or OPC tag or tag written by a mediator).

4) Short Messages (SMS)

Messages are received from remote GSM modems under the form of short messages (SMS). Short messages can also be sent back for acknowledgment.

5) API / Command line

Messages are transmitted through the function <AlertSendDataToScript> of the Alert API or the command <SendDataToScript> addressed to Alert (see § 8.13.17).

6) Other

Messages are cyclically extracted from a **file**, a **data base**, or a **mail box** (email).

The message processor is able to simultaneously process messages from different origin. Each treatment is described by a **prototype** which include a set of parameters that are saved in an initialization file (file *<prototype>.ini*) associated with a **script** (file *<prototype>.prg*).

The script is a Basic type program which is executed by the message processor and which is designed to extract significant information from the messages and to trig the consequent **Alert** treatments.

The script functioning can take in account external setup data (lists and translations) that are specific to the installation and saved in a text file (*<prototype>.csv*). These external configuration data define the associations to perform between information extracted from

the received messages and the parameters of alarms to trig (group to call, message to send, priority ...).

If information contained in the messages are rich enough, the script can dynamically create the alarms from reported information and defined translations then set (or reset) them. In this case, it will not be necessary to declare alarms in **Alert**, excepted if complementary information is needed (recorded voice message or text file).
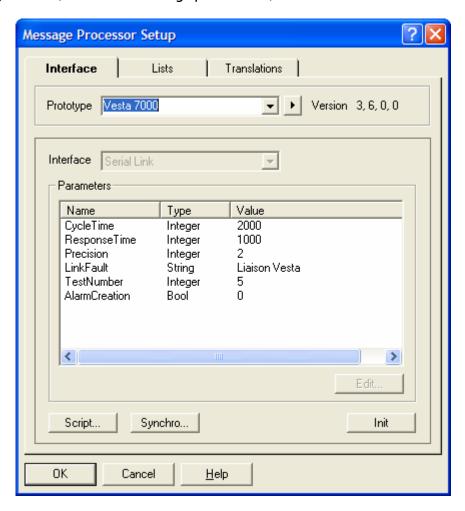
If information that is contained in messages is not sufficient (transmission of just an event identifier for example), alarms to treat will have to be prior declared in **Alert**. The script just will have to set and reset the declared alarms following received messages.

8.14.2   Configuration

By default the message processor is not activated.

To **activate message processor**, open the "Options" dialog box (menu *Configuration*, command *Options...*) then on the "General" page, select the check box "Message processor activation" (on the bottom of the page), then validate by OK.

When the message processor is activated, an entry in the *Configuration* menu give access to its configuration (command *Message processor...*).

The dialog box for configuration of the message processor allows the definition of prototypes to activate and the configuration of each of these prototypes.

To **edit**, **add**, **import** or **remove** a **prototype**, click on the button ">" on the right of the drop-down list *Prototype*, then, in the displayed contextual menu, select the corresponding command (respectively *Edit...*, *Add...*, *Import...* or *Remove*).

The **importation of a prototype** consists in selection of the initialization file of the wanted prototype (<prototype>.ini). If this file is not located in the current application directory, it is automatically recopied with all associated files (<prototype>.prg and <prototype>.csv).
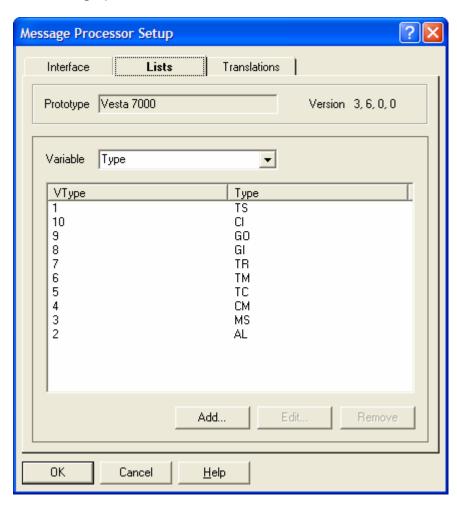
During the **creation of a prototype**, the following parameters have to be defined:

- an **identifier** : short name used as radical for the configuration files (initialization, script and application data).
- a **name** : explicit name for designation of the prototype.
- the **interface type** used by the prototype : serial link, file/data base, short message.

It will be next possible to define **variables** that will be referenced by the script to parameter its working (**initial parameters**) or to store the value of the fields extracted from the received messages.

Some variables can be defined as **list variables**. The list variables allow both the definition of a set of accepted value for a message field and the conversion of a value to another value: for example, conversion of a message id to explicit message, or association of a machine id to an area number.

A list variable is defined in connection with an other variable. Its value depends on the value of the associated variable. The associations between the value of a list variable and the values of its associated variable are defined in the page "Lists" of the configuration dialog box of the message processor.

The value of a list variable is set by calling the function `SETFROMLIST` in the script. This function will get from the list the value that corresponds with the actual value of the associated variable.

The creation and set/reset of alarms is performed in the script by the mean of methods of the Alert object (defined in the script). These methods use parameters that have to be initialized by the script. This initialization can be automatically performed by calling the function `RESOLVEALERTPARAM` which will update the parameters of the Alert interface following the type of translation defined for each parameter and the content of the associated variables:

- translation by value : the parameter is the value of a variable,
- translation by expression : a text including the value of one or several variables is recopied in the parameter,
- translation by function : the parameter is a function of a set of 1 to 3 primary parameters.

The translations by function are defined in the page "Translations" of the configuration dialog box of the message processor.